Paper
TRADE JOURNAL
PUBLISHED WEEKLY

MAY 4, 1951

WHAT IS THE CONSUMPTION OF PAPER BY ONE HOTEL CHAIN . . . See page 30

HOW IS HARDBOARD PRODUCED? . . . See page 22

WOOD PULP

G

Established 1886

"Hear ye not the hum of mighty workings!"
JOHN KEATS

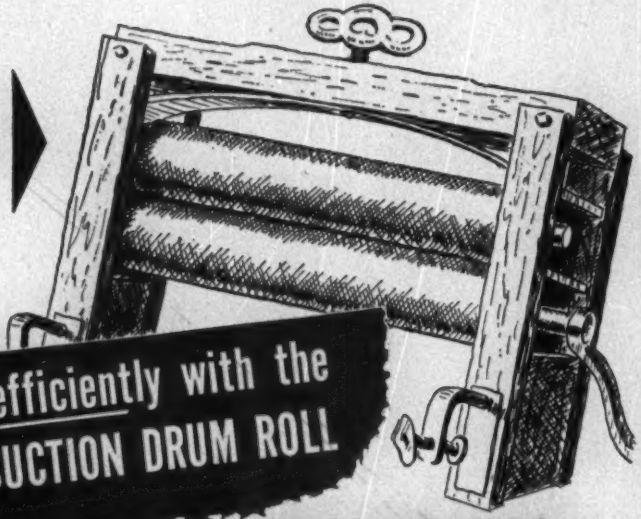
Paper makes and charts the great roadway of civilization's advance.

During this half century alone, United States paper consumption has increased more than seven-fold, and continues apace.

We salute the men of the Pulp and Paper Industry who have made possible "the hum of mighty workings" in one of America's great production miracles.

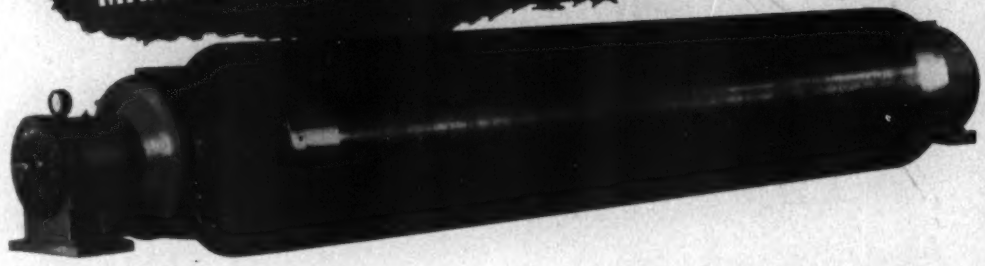
GOTTESMAN & COMPANY
— INCORPORATED —
100 PARK AVENUE • NEW YORK 17, N. Y.
EUROPEAN OFFICES: Birger Jarlsgatan 8, Stockholm, Sweden

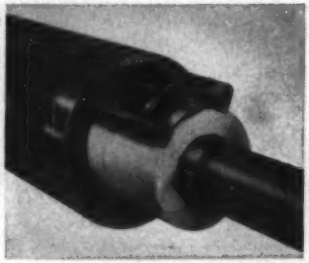
Here's the way some mills still do it!



BUT MODERN MILLS

remove water efficiently with the MANCHESTER SUCTION DRUM ROLL



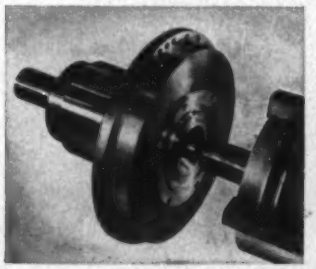


Balanced design at its best. Note these features: Box and shell built concentrically; box can be pulled in running position; smooth, even contact of packing against inner shell bore; pressure of packing against inner shell bore *always* at right angles to centerline of box and shell; durable stainless feather-weight packing springs, stainless steel studs and nuts.

YOU TOO CAN HAVE THESE

BIG 7 ADVANTAGES

1. Bigger Profits
2. Better-Quality Paper
3. Quicker Buyer Acceptance of Your Products
4. Longer Felt Life
5. Cleaner Felts
6. Faster Drying Rate
7. Increased Production



Here you can see how the grease *stays in* and water *stays out*. The forged steel heads have bearings positively sealed against moisture. With this rugged construction you get highest efficiency and insurance against down-time and production losses in your mill.

Write today for complete information and quotation on your requirements.

THE MANCHESTER MACHINE COMPANY

1710 CENTRAL AVENUE • MIDDLETOWN, OHIO

SPECIALISTS IN PAPER MILL MACHINERY AND COMPLETE REPAIR SERVICE

• *"you name it...I helped make it!"*

Glue that defies the elements

I've got to know the answers. About glue! Especially for overseas shipments. Waterproof adhesives must be immune to the extremes of warm rain, icy refrigeration. Moisture-resistant glues must withstand sweating tropical humidity, dampness. And on the production line? Fast-acting adhesives must keep pace with high-speed packaging that's so vital to increased output and decreased cost.

... and that's only a glimpse!

• *"you name it ... I helped make it!"* Think of all our defense preparations. Medical supplies where non-toxic, chemical-resistant adhesives must meet rigid drug and pharmaceutical codes. Bomb rings. G. I. Joe's shoes. Field rations. Guns, planes, tanks. All require adhesives. The NATIONAL touch is everywhere. Glue applied through imaginative research and service. To every item of defense.

STARCHES **National** ADHESIVES

NATIONAL STARCH PRODUCTS INC.

Executive Offices: 270 Madison Ave., New York 16, N.Y. • **Plants:** Dunellen, N. J., Chicago, Indianapolis, San Francisco. • **Sales Offices:** All principal cities. • **Canada:** Toronto and Montreal. • **England:** Slough. • **Holland:** Veendam.

Ready! 4 chemical derivatives from Starch

FREE RESEARCH KIT

The best place to keep abreast of new developments in chemical derivatives from starch is right in your own experimental laboratory. Try applying the widely varying characteristics of NATIONAL's four basic chemical derivatives and a new type of starch to your current problems.

1—DRY FLO—a starch ester derivative containing hydrophobic groups. Excellent flow . . . yet cannot be wetted with water. Will produce films with water repellent properties.

2—VULCA 100—an ether derivative of ungelatinized starch. Its granules are unaffected by heat or chemicals. Can be autoclaved without appreciably changing its properties.

3—CLEAR-FLO—the sodium salt of a low substituted starch acid ester derivative. Easy to prepare, free flowing, clear and smoothly textured. Won't 'skin over' on long exposure to the air. Unaffected by freezing.

4—NU-FILM—a starch acid ester derivative containing sodium carboxylate and sulfonate groups. Has demonstrated unusual soil suspending ability and resistance to wet soil pick-up.

5—AMIOCA—a new type of starch consisting of pure amylopectin. Gelatinizes sharply after minimum cooking. Finished pastes resemble natural gums.

NATIONAL'S Research Kit contains 5 generous samples and detailed technical bulletins. Mailed without charge. Simply attach this advertisement to your company's letterhead. Address: NATIONAL STARCH PRODUCTS, 270 Madison Ave., New York 16, N.Y.

You can't go WRONG!
POWELL
THE WM. POWELL CO., 2525 Spring Grove Ave., P. O. Box 106, Station B, Cincinnati 22, Ohio

Paper TRADE JOURNAL

VOL. 132 MAY 4, 1951 No. 18

FEATURES

	Pages
Contractors for Austrian Projects	11
How CPR22 Affects You	12
Government Gospel	14
The Newsprint Situation	17
Hardboard from Wood	22
Paper in the Hotel Industry	30

DEPARTMENTS

Our Business	7	Prices	39
Trends	9	Materials	40
News of the Week	11	Imports	42
Industrial Section	17	Literature	44
Patents	34	Production	46
Financial	38	Obituaries	46
CLASSIFIED ADVERTISING	47	ADVERTISERS INDEX	58

PUBLISHED EVERY FRIDAY

LOCKWOOD TRADE JOURNAL CO., INC., 15 West Forty-Seventh Street, New York 19

Phone: PLaza 7-2370

GEORGE E. LOCKWOOD, President and Treasurer
ARTHUR E. GORDON, Vice-President
FREDERICK E. WINKLER, Secretary

HENRY J. PERRY, Editor
R. E. THUEMMES, Managing Editor
E. P. McGINN, Industrial Editor
E. P. NUTTALL, Associate Editor

Entered as Second Class matter at the post office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U.S.A. Copyright 1951 by Lockwood Trade Journal Co., Inc. PAPER established Feb. 17, 1869, combined with PAPER TRADE JOURNAL, Nov. 16, 1899. PAPER established Sept. 21, 1910, combined with PAPER TRADE JOURNAL, February 19, 1926. All rights to the above titles reserved. Contents of PAPER TRADE JOURNAL, including all articles, illustrations, etc., are copyrighted and may not be reprinted except by permission. PAPER TRADE JOURNAL is indexed in Industrial Arts Index and Engineering Index. Also publisher LOCKWOOD'S Annual DIRECTORY OF THE PAPER AND ALLIED TRADES.

NEXT WEEK

How to prolong the life of felt conditioners is explained in the second article of the Maintenance Series, "Maintenance of Felt Conditioners" by B. D. Warren.

The Necessity of Maintenance and Protection of Forest Lands is outlined in "Wood Waste in the Douglas Fir Region" by F. W. Guernsey, Forest Products Engineer, Vancouver Laboratories, Forest Products Laboratories of Canada.

REMEMBER THESE DATES

MAY 7-13: Forest Products Research Society, Annual Meeting and Industry Show of 1951, Convention Hall, Philadelphia, Pa.

MAY 11-12: American Pulp & Paper Mill Supts. Ass'n., Penn. New Jersey-Delaware Div., at Hotel Easton, Easton, Pa.

MAY 15-16: American Institute of Chemical Engineers, Regional Meeting, Hotel Muehlebach, Kansas City, Mo.

MAY 25: The Miami Valley Div., of the American Pulp & Paper Mill Supts. Ass'n. meeting at the plant of the Orr Felt and Blanket Co., Piqua, Ohio.

JUNE 3-6: National Paper Box Mfrs. Assn., Haddon Hall, Atlantic City, N. J.

JUNE 18-22: American Society for Testing Materials, Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.

JUNE 22-23: Maine-New Hampshire Section of TAPPI, meeting to be held at the Eastern Slope Inn at North Conway, N. H.

JUNE 24-28: American Pulp & Paper Mill Supts. Ass'n. National Convention, to be held at the Multnomah Hotel, Portland, Oregon.

JUNE 27-30: Empire State TAPPI, meeting at the White Face Inn, Lake Placid, N. Y.

SUBSCRIPTIONS

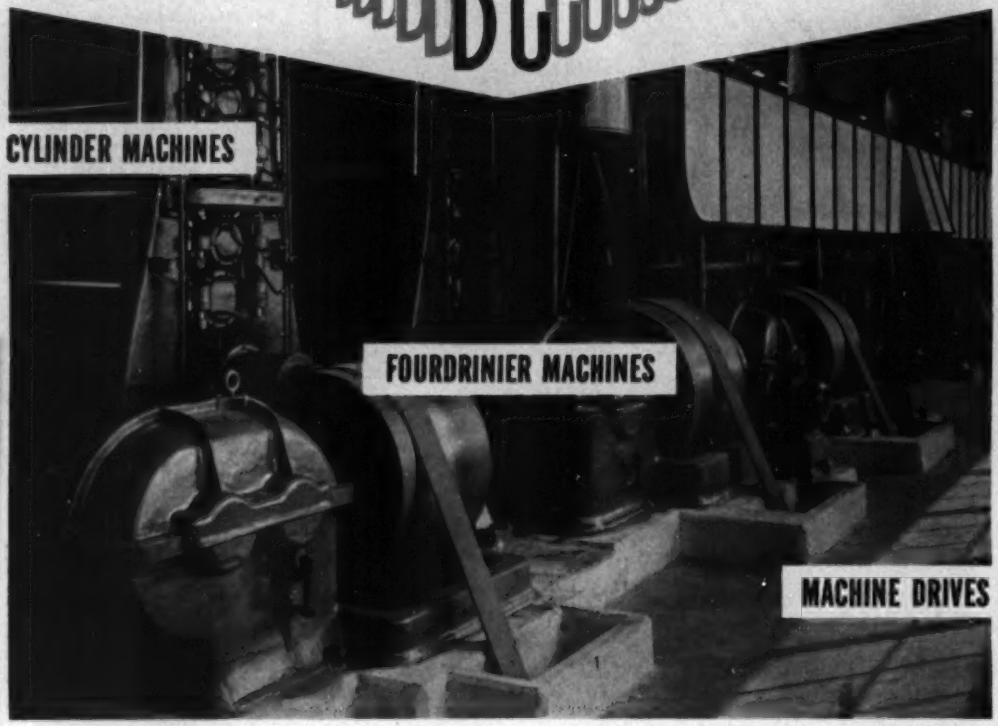
Payable in advance—Single Copy 15c—U. S. $8.00 per year— U. S. Possessions $7.00 per year.

Canada $7.00 per year—Canadian Funds acceptable.

Latin American Countries $15.00 per year.

All Other Countries $20.00 per year.

B-C



The Black-Clawson Organization is in position to "outfit" that new mill you are about to build—all the way from Hydrapulper to winder—the converting plant also, if called for in the plans.

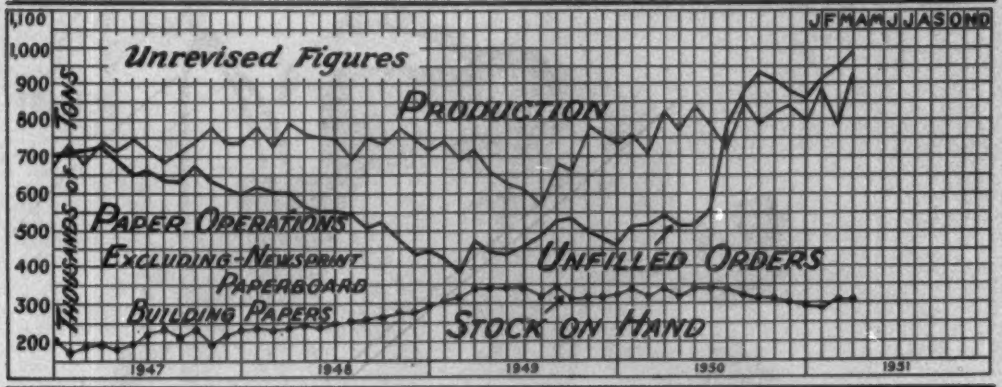
And the advantages of one over-all contract are obvious: Better synchronization of the many machines and sections that go to "outfit" the mill. Delivery of the various units in proper installing sequence. And, most important of all, the centering of responsibility for satisfactory start up and smooth functioning of entire mill.

Get Black-Clawson over-all estimate when ready to outline your general plan.

BLACK-CLAWSON

HAMILTON, OHIO

Divisions: SHARTLE BROS. MACHINE CO., Middletown, O.
DILTS MACHINE WORKS, Fulton, New York
Western Sales Office: Mayer Bldg., Portland, Oregon
Southern Sales Office: 937 Coventry Road, Decatur, Georgia
Associate: ALEXANDER FLECK LIMITED, Ottawa, Canada
Subsidiary: B-C INTERNATIONAL, LTD., Greener House 66/68 Haymarket, London, S. W. 1, England



Weekly Brief of Important Figures

Source	Production	WEEK ENDING Apr. 21, '51	Mar. 24, '51	Apr. 22, '50
APPA	Paper Production Percent Capacity[3]	105.2	102.6	96.9
	Unbl. Kraft Paper Production Percent	90.2	99.6	95.6
NPA	Paperboard Operating Ratio Percent Inch Hours	107	105	93
		Mar. 1951	**Feb. 1951x**	**Mar. 1950**
APPA	Paper Production[9] (Except Newsprint and Building Papers) ....Tons	913,000	818,628	837,187
	New Orders ....Tons	958,000	816,052	854,627
	Unfilled Orders ....Tons	980,880	938,390	532,750
	Shipments ....Tons	916,000	810,035	840,905
		Mar. 1951	**Feb. 1951**	**Mar. 1950**
NPA	Paperboard Production ....Tons	984,405	977,946	908,600
	New Orders ....Tons	946,819	987,609	952,600
	Unfilled Orders ....Tons	704,936	758,562	371,800
	Our Customers Activities Index[1]	**Latest Mo.[6]**	**Previous Mo.[6]**	**Year Ago[6]**
FRS	Manufactures Total Index	227	227	188
	Durable Mfg. Index	269	265	204
	Nondurable Mfg. Index	194	196	176
	Chemical Products Index	288	288	250
	Mfg. Food Products Index	151	155	146
	Printing and Publishing Index	174	165	166
ODC	Magazine Advg.-Printer's Ink Index	344	347	330
	Retail Sales Combined Adjusted Index	353.1	366.9	306.0
	Drug Index	233.7	234.0	220.7
	General Merchandise Group Index	347.5	376.1	297.0
	Grocery and Combination Index	427.6	421.8	368.3
	Prices Index			
BLS	Consumers Price Index[1]	183.8	181.5	167.9
	Wholesale all Commodities[2]	183.6	180.1	152.7
	Wholesale Foods[2]	187.7	182.3	156.7
	Commodities other than Farm Products and Foods[2]	171.8	170.3	145.9
	Wholesale Pulp and Paper[2]	196.5	196.5	155.6
	Purchasing Power of Dollar, Consumers Prices[1]	54.4	55.1	59.6
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	424.9	423.3	330.0
	Unemployment Compensation Initial Claims (M)	770	1,080	1,240
	Miscellaneous Carloadings--Thousands of Cars	1,373	1,498	1,296
	Electric Output (Million KW hr.)	33,102	36,726	28,789
PTJ	Average 32 P & P Common Stocks as of April 24	$38.67	$37.53	$32.43
	Average Indicated Dividends Common Stocks as of April 24	2.53	2.34	2.29

[1] 1935 - 39=100 Unadjusted Index
[2] 1926=100
[6] New 6-7 day basis.
[9] For details see APPA Monthly Statistical Summary—March 1951 Estimated Figures
[6] Latest Month Available on Request
x Revised figures.

VALUE in a fine product reflects the experience and skills of its makers.

VALUE in Fourdrinier wires is a matter of record... paper quality and production records in mills throughout America reflect the fact that *Appleton Wires are Good Wires!*

APPLETON WIRE WORKS, INC.
APPLETON • WISCONSIN

Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 2, 1951.

Healing for today's many woes is free for the taking among the blossoming trees of another Maytime. We take note of the beauty of new growth and renew our faith that we, too, shall survive for another Spring.

A Sense of Timing

Many suspect that a sense of timing is the secret for success in every venture. There's the right time to buy, the moment to sell, time to bring out a new product, the season to change design.

In business, this sense of timing is largely developed through experience, though to some it seems to be a gift. In baseball, golf and tennis, it's learning the moment and rhythm of swing; in sailing it's catching the tide and wind; in ballet, it's balance, downbeat and rhythm. Genius in painting and in writing is knowing when the idea is fully-baked.

On the other hand, we have the erratic who must "give" when an idea "pops"; and those who, waiting overlong, miss the tide.

It's a Washington tragedy that we have cared too little how many of these latter get into governmental authority.

More Delays in OPS Releases

There must be a time too for releasing price regulations. Some see the Office of Price Stabilization as committed to "await occasions, never hurry."

It's a long night of waiting since the import-export regulations were promised, and many a week since waste paper and cotton rag and wood pulp ceilings were scheduled for release.

Meanwhile normal export trading is crippled, importers hobble along from week to week, mills limit their raw materials buying to current needs, and markets become glutted with supplies. Each week brings new promises of regulation releases: import orders, wood pulp ceilings, waste paper rollbacks, etc. "The night is far spent." Perhaps "the day is at hand."

Anticipated is that this week's meetings of the International Materials Conference in Washington, also various Industry Committee meetings with NPA and OPA will bring speedy action.

Supplementary Order No. 1, CPR 22

The supplementary regulation, issued May 1 and effective May 28, 1951, extends cut-off date for figuring increased costs of imported pulpwood and woodpulp to and including April 16.

Describing the new prices as "clearly inflationary," the order warns that: "It is not to be inferred that similar actions will be taken with reference to later quarterly pricing periods in event of future increases in wood pulp and pulpwood prices." . . . "The change in this instance is allowed only because the cost increase for imported pulp and pulpwood after March 15 has been of such tremendous magnitude as to make operations impossible under the ceilings otherwise calculated for a mill that uses a large percentage of imported pulp and pulpwood."

To press time, there was no indication of what trend Swedish and Norwegian prices would take for the balance of the quarter, that is, those mills which named prices for the month of April only. It is expected that some good may come out of the 14-nation discussions on materials this week.

Wanted by consuming mills is a buying ceiling for imported pulps, a ceiling of approximately $200 for unbleacheds, $225 for bleacheds above which pulps could not be bought. Though domestic paper and board mills are in some instances badly pinched for want of Scandinavian-type pulps, the situation is not seen as critical. If it gets no worse, industry spokesmen say, we'll be all right. Consumers who construe the Swedish pressure for higher prices as a threat to sell the wanted tonnages in other countries, are disposed to take the producers at their word. At such high prices, they cannot hope to stay in business and compete with integrated competition, it is stated.

Industry Studies CPR 22

Lack of industry comment on the limitations of the manufacturers' pricing regulation is largely due to the need for time to study and interpret its wordiness. Voiced here is the belief that OPS waited too long to stem the tide of inflation, also that a new price order will be issued before industry can find out where it stands on its diversified line.

Though some producers will be entitled to increase prices under the requirements of the CPR order, it is not expected that it generally will be done in the face of integrated prices which may in some instances be subject to some rollback.

Profit Regulation Opposed

Opposition to the use of price controls for the regulation of profits, as called for in the 85 percent profit clause in ESA pricing policy, is being made by the National Retail Dry Goods Association.

The retailers charge that inequities will thus be worked on retailers and, in turn, on consumers. The association called on Congress to revise the Defense Production Act which expires June 30 and to amend it so as to prevent the issuance of a manufacturers' maximum average price regulation. Also suggested is retention and strengthening of the provision that price control be accompanied by wage control, and extension of the Act for one year only.

Business Trends

There is no doubt in anyone's mind that business is not good at the retail level. Though stimulated to some degree by promotions, consumer spending is but a little ahead of a year ago despite higher prices. Textiles are badly hit, so is jewelry and other similar lines. Though some seasonal pickup is likely as summer approaches, no real improvement is expected before the Fall.

Effect on Paper Market

Thus far, the industry's markets have been little affected by the dip in consumer buying. Set-up boxes have eased. There is no easing of demand for wrapping supplies as yet, and none is expected in the immediate future. All consumers are pressing for supplies of wrapping tissues and kraft wrapping, both in short supply for many months.

From the mill point of view, any improvement in supply of kraft wrapping must come from consumer demand. Rate of production is undiminished, government requirements—Army in particular—are many times the estimate.

Tissues.—No overall softness is present in demand for most grades of tissues, though in facial and sanitary types the smaller and marginal producers note a buyers' market has set in. Industrial requirements are steady and growing.

Fine Papers.—A slight lessening of pressure of demand is noted in most grades of fine papers. This is not a general condition and only spots of easing can be located. Offsets, bristols and sulfite papers are extremely tight. Reports of easing in machine coateds persist, but the condition again can be localized. Faced with the light summer season, distributors see possible some duller business. This, however, is only in degree. The mills are so loaded with orders that none wants even to discuss more tonnage. Distributors' inventories are low and many speak of a continued volume of business from large printers.

Waste Paper Eases Again

Low bulky grades of waste papers, mixed and news, were dropped $5 and $4 a ton respectively on April 30 in the New York market. (See *Prices* page for all markets.)

—E. P. N.

Paperboard Production (Tons)*

	Apr. 21 1951	Apr. 14 1951	Apr. 27 1950
Production	256,538	248,406	211,368
New Orders	225,583	199,937	193,646
Unfilled Orders	694,219	726,783	356,134

* Source: NPA.

Sizing costs cut one third

At today's high rosin prices, Mersize saves over $1-per-ton

● Save 3¢ on every pound of rosin you now buy . . . save $1 per ton of paper, or board, with Monsanto's Mersize.

As rosin prices climbed, Mersize savings almost doubled. And, Mersize gives you BETTER SIZING. Feathering is cut to a minimum; greater temporary wet strength reduces broke. Mersize minimizes surface sizing; acts as a booster and stabilizing agent, meets low-rosin content specifications, and improves water resistance of the final product.

Mersize-rosin combination

You can have Mersize *alone*, or a new Mersize-rosin combination that makes your sizing easier and more economical. One hundred pounds of the new combination works like 200 pounds of rosin size.

Free booklet

Please write today for information on Mersize and for your free copy of "Better Sizing at Lower Cost with Mersize CD-2."
Monsanto Chemical Company,
Merrimac Division, Boston 49, Mass.
Mersize: Reg. U.S. Pat. Off.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

News of the Week

Paper TRADE JOURNAL

CONTRACTORS FOR AUSTRIAN PROJECTS

The U.S. prime contractors for ECA Project No. 22, pulp and paper equipment for Natronzellstoff und Aktiengesellschaft at Frantscach, are: Bagley & Sewall Co., Watertown, N. Y., Fourdrinier, trim 4,400 mm.; Sutherland Refiner Corp., Trenton, N. J., three refiners; Dilts Machine Works, Fulton, N. Y., one hydrapulper.

Purchase of paper machines and equipment for Project No. 26, the modernization of pulp and paper mill at Gratwein for Leykam-Josefstahl A/G., has been switched from the United States to Germany.

On Project No. 27, modernization and expansion of paperboard mill at Frohnleiten for Karton und Papenfabrik von Franz Mayr-Melnhof & Co., Beloit Iron Works, Beloit, Wis., are supplying the wet end section and calendars and spare parts. Black Clawson Co., Hamilton, Ohio, are to furnish a hydrapulper, hydrafiner, jordans and spare parts; and Trimbey Machine Works, Glens Falls, N. Y., two screens.

The following contracts have been awarded on Project No. 28, kraft pulp and paper mill at Nettingsdorf for Nettingsdorfer Papierfabrik Aktiengesellschaft:

Link Belt Co., Washington, D. C., link belt; Carthage Machine Co., Carthage, N. Y., log chipper and grinding machine; Dorr Co., New York, N. Y., causticizing plant; Babcock & Wilcox Co., New York, N. Y., soda recovery plant; Western Precipitation Corp., Los Angeles, Calif., electric filter plant; Oliver United Filters, Inc., New York, N. Y., or Improved Paper Machinery Co., Nashua, N. H., continuous washing plant; Sutherland Refiner Corp., Trenton, N. J., stock preparation plant for PM3 and PM4; Pusey & Jones Corp., Wilmington, Del., one Fourdrinier.

CONSTRUCTION AT ELK FALLS

Construction is underway by the B. C. Bridge & Dredging Co. Ltd., 544 Howe street, Vancouver, B. C., on three buildings for the new pulp and paper plant of the Elk Falls Co. Ltd., at Duncan Bay on Vancouver Island. These buildings will be separate units of wood frame construction and will be used for shops, offices and a warehouse.

It is expected the same contracting firm will be awarded general contract for erection of the initial unit for the actual plant. Excavating work on the site for this reinforced concrete building is now nearing completion by Northern Construction and J. W. Stewart Ltd., 1304 Hornby street, Vancouver. Completion of the excavation work is expected soon and start of construction on the mill will follow immediately. This unit will be a newsprint mill designed to produce between 75,000 and 100,000 tons annually.

12 NATIONS DISCUSS PAPER

WASHINGTON, D. C. — A twelve-nation committee to plan increased production of newsprint and other paper products is meeting this week.

The group is the pulp and paper committee of the International Materials Conference. Participating are the United States, Australia, Belgium, Brazil, Canada, France, Western Germany, Italy, the Netherlands, Norway, Sweden and Great Britain.

The committee will concentrate on problems of newsprint, kraft paper and kraft board. It is charged with planning increased production of these items, conservation, and, if necessary, measures to guarantee fair distribution.

MACHINERY FOR PAKISTAN MILL

Machinery and equipment for the government sponsored mill at Chandragonga, East Pakistan arrived recently from Europe and the United States. A shipment of raw materials from Europe also arrived and two shipments from the Continent and from the United States are on their way. The survey and site clearance work has been completed.

A 13000 kw power generation plant has been installed and arrangements have been completed for water supply. Mill construction will start immediately. One of the machines is expected to start operating by the end of 1951 and the entire mill is expected to be in production in early 1953. When completed, the mill will produce 30,000 tons of writing and printing paper a year.

ASH GETS HONORARY DEGREE

Frank C. Ash, president of the Oswego Falls Corp. of Fulton, N. Y., received the honorary Doctor of Laws degree on April 27 at a special convocation marking the fiftieth anniversary of Syracuse University's L. C. Smith College of Applied Science.

FINCH PRUYN'S NEW MACHINE

A $1 Million Fourdrinier, the first brand new Paper Machine to be installed in New York State in some time, has started up at Finch Pruyn & Co.'s Mill at Glens Falls, N. Y. Built by Pusey & Jones Corp., Wilmington, Del., it has 122" Wire and is designed to operate at 1000 f.p.m.

How CPR 22 Affects You

O.P.S. has at last issued the Manufacturers Price Regulation order. It is reported to be the result of a great deal of consultation between government, labor, industry, economists and accountants, and apparently it is the best that this array of talent can produce.

Basically it sets a price foundation, based on manufacturing costs during the pre-Korean period of April 1st to June 24th, 1950. To costs in this period may be added increases in cost of manufacturing materials and labor. This would seem to be relatively simple until you read the fine print.

1. In the case of labor costs, not all labor can be included, even though its pay has been increased. Specifically: *you cannot add to your costs* any increases paid to labor used in administration, sales, advertising or for research. *You also must keep separate from ordinary maintenance:* labor costs or major repairs in replacement of plant or equipment or for expansion of either. The former can not be added; ordinary maintenance can. Thus it would seem that if you have a complete major breakdown, you can not charge it against your manufacturing cost, while repairing a leaky pipe is chargeable. This provision makes preventive maintenance doubly worthwhile and complete cost accounting a necessity.

2. Manufacturing materials are those items entering directly into the commodity being priced or used directly in the manufacturing process. The period for base materials price is April 1st to June 24, 1950 with increases to December 31, 1950 as outlined above. However, *the pulp and paper industry along with several other industries gets special consideration. Its period for increases has been extended until March 15, 1951.*

In our industry, these manufacturing materials also would seem to include felts, wires, lubrication, and the multitude of vital items used in the process and product, as well as the raw materials. Thus any increase in their cost to you up to March 15, 1951 can be added to your manufacturing costs.

Supplement No. 1 allows pulp and paper manufacturers to add increases on imported pulp wood and woodpulp up to April 16, 1951. The cut off date on domestic pulp, made from domestic wood remains at March 15.

Because many commodities have been covered in previous orders or will be in the near future, many items used in the industry are exempt from the provisions of CPR 22.

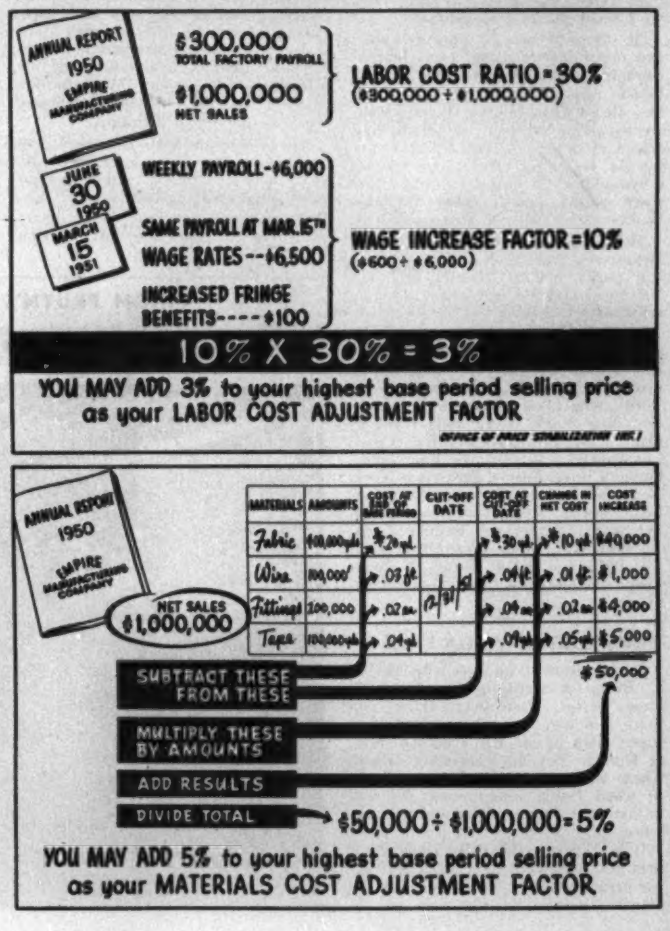
The major exemptions are:

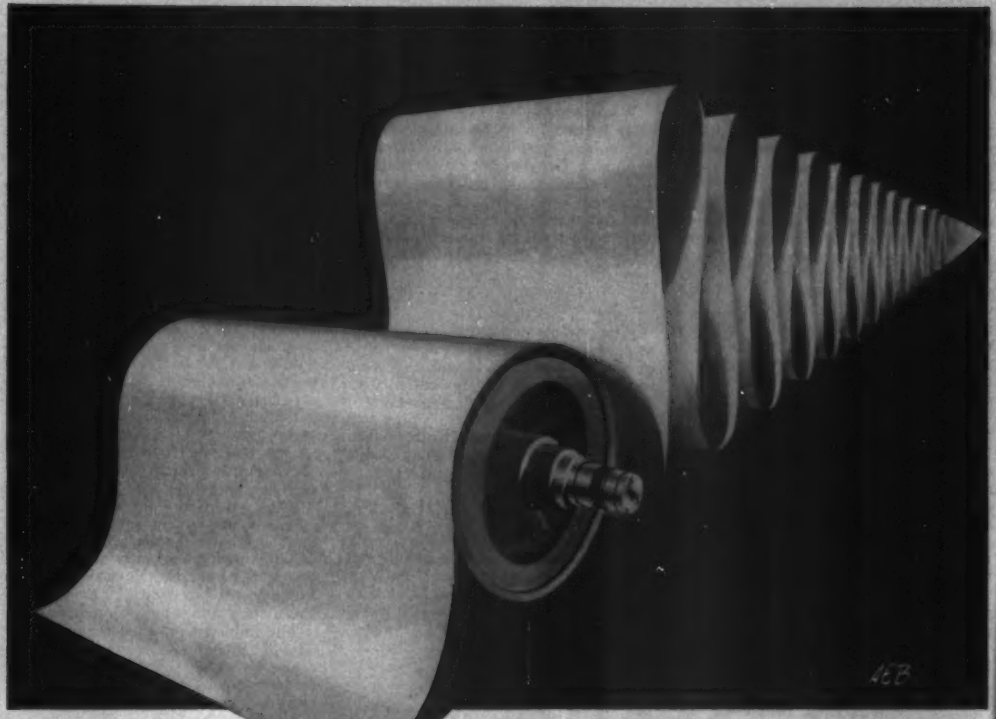
1. Stumpage, logs and pulpwood.
2. Gas, electricity and steam.
3. All scrap and waste materials.
4. All repair parts supplied by the original supplier.
5. Felts.
6. Lumber, wood containers.
7. Naval stores products.
8. Casein.
9. Cotton linters.
10. Fuel oil, lubricants.
11. Coal.
12. Lime.
13. Clays.

Thus we have CPR 22 Manufacturers General Price Ceiling Regulation issued with the objective of equalizing unfair current ceilings. Effective date of the order is May 28, 1951. Maybe it will accomplish its purpose as an interim stop gap. However, it certainly will take hours of productive time of thousands to set its procedures and rules in action, only to be superseded by another regulation within a few months.

Figure 1 illustrates how increases can be calculated. In the case of paper this computation would have to be made on each grade.

Figure 1





Drying Rates Up 25% to 50% with Lukenweld Protected Pressure Increases

Have old fears about pressures put an anchor on your drying rates?

If so, you may be selling your production potential short. A boost up to 67% with pressure increases can be easily yours with Lukenweld Jacketed Steel Drier Rolls.

Featuring assured safety through use of high strength rolled steel plate, Lukenweld Drier Rolls permit operation at pressures as high as 350 psi and higher. Because of their welded steel design plate construction, these advanced drier rolls are endorsed by leading insurance companies . . . have, steadily over the years, boosted output schedules of users across the country.

You'll find, in addition, that Lukenweld Drier Rolls mean reduced installation expense, minimized maintenance, uninterrupted operation.

For information on drying and other processing machinery for the pulp and paper industry, write Lukenweld, Division of Lukens Steel Company, 403 Lukens Building, Coatesville, Pennsylvania.

Improved machinery for improved processes through engineering

LUKENWELD

A DIVISION OF LUKENS STEEL COMPANY

LUKENS

GOVERNMENT GOSPEL

Revise DO Symbols

The Defense Production Administration has issued a revised list of DO symbols used at the present time in rating orders for production under the mobilization program.

The two-digit code numbers assigned to the various DO ratings are purely for purposes of identifying the program or the claimant agency to which the defense order is related, and do not indicate any preference. Rated orders are to be accepted in the order in which they are received. The code numbers are subject to change from time to time and may be revised when the controlled materials plan comes into operation July 1.

The DO-rating system is a single-rating band, and regulations require that all DO-rated orders be filled in advance of non-rated orders. Many materials and products needed for the defense program are in short supply, and the purpose of the single-band priorities system is to assure that defense and defense-supporting production has the right of way.

Following are the code numbers presently assigned to the various programs:

DO CODE No.	AGENCY PROGRAM	MAJOR PROGRAM INVOLVED
01	Department of Defense	Aircraft
02	Department of Defense	Guided Missiles
03	Department of Defense	Ships
04	Department of Defense	Tank-Automotive
05	Department of Defense	Weapons
06	Department of Defense	Ammunitions
07	Department of Defense	Electronics & Communications Equip.
08	Department of Defense	Fuels & Lubricants
09	Department of Defense	Clothing & Equipage
10	Department of Defense	Transportation Equipment
11	Department of Defense	Building Supplies & Equipment for Overseas Construction
12	Department of Defense	Subsistence
19	Department of Defense	Production Equipment
21	Department of Defense	Miscellaneous
22	Department of Defense	Contract Construction
35	NPA for ECA	Foreign Additional Military Production
36	NPA for ECA	Foreign Non-Military Production
37	NPA for OIT	Foreign Production other than ECA (Non-Military)
38	NPA	U. S. Transportation Equipment
40	Atomic Energy Commission	Operations
41	Atomic Energy Commission	Construction
42	Atomic Energy Commission	Construction Equipment
48	Atomic Energy Commission (NPA	Privately-Owned Facilities
45	(Civil Aeronautics Adm. (Natl. Adv. Comm. or Aero.	Miscellaneous
46	NPA	Industry Plant Expansion
47	NPA	All Canadian Programs
48	Dept. of Interior	All Programs
49	Dept. of State	Voice of America
60	U. S. Coast Guard	Miscellaneous
61	U. S. Coast Guard	Aircraft
62	U. S. Coast Guard	Construction
63	U. S. Coast Guard	Ships
63	NPA	Steel Shipping Containers
75	NPA	Mining Machinery
87	NPA (or delegatee)	Farm Machinery
90	NPA	U. S. Transportation Equipment
91	NPA	U. S. Transportation Equipment
92	NPA	U. S. Transportation Equipment
94	NPA	Oil Field Equipment
97	NPA (or delegatee)	Maintenance, Repair & Operating Supplies
98	NPA (or delegatee)	Production Equipment for Certain Private Contractors
99	NPA (or delegatee)	Basketing (Consolidation of Small Orders as provided in NPA Reg. 2)

May Curtail Use of Sulfur

WASHINGTON, D. C. — Little possibility is seen for increasing native sulfur output, despite rapidly mounting demand. Government and industry representatives meeting here, stressed that there is a shortage of native sulfur, and that some curtailment of uses must be ordered, to conserve the product for more essential uses. What these should be is more a problem of the government than of private business.

There was some division of opinion as to proper government action. Two of the four industry members recommended government allocation, while another member said he would prefer to see the detailed allocation plan first. A fourth member favored informal direction by government as more satisfactory than outright allocation.

Average Wage Increased

WASHINGTON, D. C. — The average weekly wage in paper and allied products manufacturing rose slightly in March to $66.51 from $65.57 in February, the Bureau of Labor Statistics reported this week.

Machinery Manufacturers Meeting

NPA has asked pulp and paper machinery manufacturers for information on papermaking machinery requirements to aid in formulating an industry program under the forthcoming Controlled Materials Plan.

Members of the Pulp and Paper Machinery Industry Advisory Committee were told at a meeting that data is needed as soon as possible on present capacity and plant expansion potentialities so that the industry can be geared to meet defense and essential civilian requirements. The committee said pulp and paper machinery makers want to continue manufacturing their products rather than unrelated items such as machine tools, but expressed willingness to shift into defense production if the needs of the rearmament program dictate such a move.

Urged by NPA to intensify scrap metal recovery efforts, members pointed out that most of their plants operate foundries which carry on constant recovery measures.

NPA asked for a report from each company on current scrap inventories and emphasized that the industry could contribute greatly toward conservation of critical materials by standardizing products, reducing plate and sheet sizes and simplifying design.

The industry reported that an average of 30 percent of its orders now carry DO-97 ratings and stated that present capacity is adequate to meet requirements, provided materials are available.

NPA called another meeting, tentatively set for May 22, when results of the scrap survey and plant capacity will be discussed.

J. A. Lawson of NPA's General Industrial Equipment Division presided at the meeting.

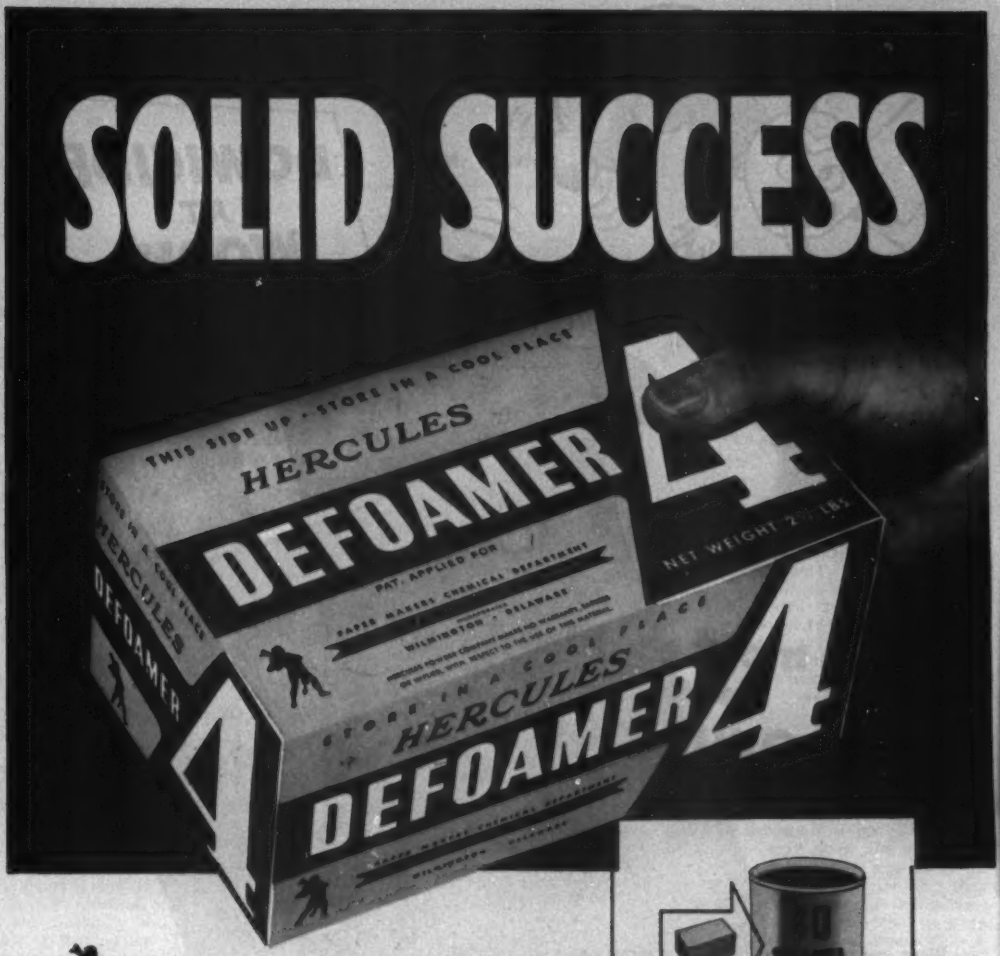
Industry members who were present are: Harry C. Moore, Beloit Iron Works; F. K. Becker, Bird Machine Co.; N. P. Wardwell, Carthage Machine Co.; Enright A. Ellis, Downington Manufacturing Co.; Roy Bolton, Emerson Manufacturing Co.; John P. Rich, Improved Paper Machinery Co.; S. Harley Jones, E. D. Jones & Sons Co.; Bryant W. Langston, Samuel M. Langston Co.; A. W. Plier, D. J. Murray Manufacturing Co.; C. S. Barton, Rice, Barton Corp.

Defense Production Inquiry Center

NPA and DPA have put a Defense Production Inquiry Center into operation in the main lobby of the old GAO Building, Fifth and G. Streets, N.W., Washington, D. C.

The new Inquiry Center is not intended to encourage businessmen to come to Washington with defense production problems, but is designed to assist individual business men, or their representatives in Washington, by providing a central place to get quick answers to their questions. Business men in other areas will continue to get information from field offices of the Department of Commerce.

SOLID SUCCESS

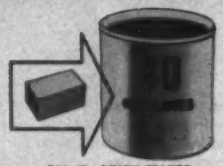


Paper and board mills throughout the country are using this solid defoamer because of its outstanding effectiveness and economy.

Defoamer 4* is the latest of a wide variety of Hercules products designed to meet the needs of varying foam conditions.

For advice based on broad experience in this field, consult your Hercules representative.

HERCULES POWDER COMPANY
Paper Makers Chemical Dept., 962 King St., Wilmington, Del.



2½-lb. BRICK MAKES 40 GALLONS

NO DRUMS TO HANDLE

HERCULES SIZING MATERIALS AND CHEMICALS FOR PAPER

*PAT. APPLIED FOR

PPST-5

give mold
wi
DOW

When you put Dowici
to work protecting your
from mold and bacterial
into your plant. In the pa
an outstanding job of micro
finished products. As a slime co
clogged screens and wires thus ave
Their use results in longer felt life, too.

Salmonella Typhosa Bacteria

ICIDE
ndustrial
cides and Fungicides

In paper finishing, Dowicides protect sizing and
tions from spoilage, saving the time and expense
in replacement batches. Many far-sighted manufacturers are today using Dowicides to make their finished products mold-resistant. Mold-resistance as a "plus-factor" is today building greater sales for soap and heavy duty wrapping papers, building papers, floral wrappings, wall and insulation board.

To give *your products* this added sales appeal, and to bring economies into your plant, give mold and bacteria the *boot* with Dowicides. Dow maintains complete laboratory facilities to help you solve your problems. Contact our nearest sales office or write direct to Midland.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Atlanta • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle
Dow Chemical of Canada, Limited, Toronto, Canada

DOW
CHEMICALS
INDISPENSABLE TO INDUSTRY
AND AGRICULTURE

The Newsprint Situation

R. M. Fowler
President, Newsprint Assn. of Canada

I am very glad that your directors decided to break your rule against having outsiders present at these ANPA meetings and gave me this opportunity to talk to you. I must say I don't feel like an outsider. While I do not have anything to do with the publication of a newspaper, I feel I represent those who have a very large stake in your business affairs. We have many mutual problems to discuss and this is not surprising for you are today receiving over 89 percent of all the newsprint we make in Canada and we are providing you with 80 percent of all the newsprint you use. It would be hard to find two industries with more in common and more sound reason for sitting down together as we are doing today to discuss each other's problems.

I wish there were more opportunities to exchange views between our two industries — that we could work out a plan for more frequent and regular discussion of the newsprint situation. I think we are going to need all the information and use all the ability we have in the two industries, to meet the problems of the next year or so.

I am sure most of you know that there is almost daily contact between your Association and ours. Cranston Williams is one of my most frequent and most welcome correspondents and I am constantly bothering him about this or that matter. This daily interchange of information is valuable and essential, and I am sure it will be continued. But I am thinking of something more than this — some way to have individual newsprint manufacturers brought into touch with the current facts of the publishing business and individual American publishers given the facts and details of the problems of newsprint production and supply. Speaking for the Canadian manufacturers, I can assure you that we are ready at any time and at any place to sit down in small or large groups to discuss with you these problems of newsprint production and supply and to hear about your publishing problems.

Defense Production Minister Howe, in answer to a question by Stanley Knowles, MP for Winnipeg, told the Canadian Parliament that Mr. Fowler was not talking Canadian Government policy when he said he believed any United States price ceiling would operate to suspend American contracts with Canadian paper mills.

Mr. Howe made it clear that Mr. Fowler was presumably speaking in his capacity as president of the Newsprint Association of Canada.

"He had no authority as far as this Government is concerned of stating that as a policy as an officer of the Government," the Minister declared.

Any predictions that anyone tries to make today must be hedged with qualifications and "escape clauses." We are living in uncertain times, are subject to world developments, and are confronted with a mounting wave of economic controls that are changing, almost daily, the rules under which we must operate. Whatever I say about your newsprint supply in 1951 must therefore be subject to a number of qualifying clauses. If an all-out war develops—if we cannot get enough essential raw materials such as sulphur —if Canada's defense production program cuts into our labor or power supplies—if additional newsprint must be supplied from North America to meet the essential needs of the overseas friends and allies of Canada and the United States — in any of these events, the forecast I give you today would have to be revised.

With these qualifications and assuming that Canadian mills can continue to expand their productive capacity and to produce at that expanded capacity, it now looks as though you will have in 1951 a total newsprint supply very close to 6,000,000 tons. That will be about 85,000 tons more than you received in 1950 and about 65,000 tons more than you consumed in 1950. In the last war year in 1945 when rationing was still in force you consumed 3,480,000 tons, so you will be over 2½ million tons better off in 1951 than you were during the last full year of government restrictions. That is a 72 percent increase in your supply in a period of six years.

This total of nearly six million tons in 1951 will probably come from the following sources: from your own mills, you will get about 1,010,000 tons (that is a slight increase over what we expect six months ago when our book "Newsprint Data: 1950" was prepared), from overseas we now expect you will receive almost 200,000 tons (that is also more than we expected in the Data Book) and we anticipate 4,775,000 tons from Canada for export to the U. S. Your Canadian supply in 1951 is likely to be 80 percent of your entire supply.

To provide the shipments expected in 1951 to you and to Canadian publishers and overseas markets the Canadian industry will have to operate again this year above its rated capacity. Last month it ran at 101 percent. This may seem like a contradiction in terms and I hope none of you will be misled into thinking that our newsprint machines are being damaged or burnt up by this kind of pressure. The term "rated capacity" is a technical term which is really equivalent to proven best performance of each newsprint machine. They do not come with a rating stamped on them like an electric motor; they can be improved by capital investment to increase speed and efficiency. Each year on September 30 our statisticians calculate for each newsprint machine its rated capacity, based on its best speed in the last ten years and its best trim in the last five years, and the total of all machines becomes the rated capacity of the industry for the next calendar year. You will readily see that when demand is high and when large capital investments are being made at the mills the figure of rated capacity will lag

EDITORIAL NOTE: Since the speech by R. M. Fowler of Montreal before the American Newspaper Publishers Assn., there have been several newspaper items which imply that he was speaking as a Canadian Government official. The speech even generated a question in the Canadian Parliament which was answered by C. D. Howe, Minister of Defense Production. It must be remembered that Mr. Fowler is the president of the Canadian Pulp and Paper Assn., president of the Newsprint Assn. of Canada, and in addition has recently been appointed Newsprint Controller of Canada. In this last position, he is to represent Canada at the International Materials Conference now being held in Washington. This Conference is charged with increasing production of newsprint, conservation, and, if necessary developing measures to insure a fair distribution of existing supplies.

behind the figures of production and we will show production above 100 percent of capacity. This means that the industry is growing and that the Canadian mills are expanding to meet the demands of their customers.

By the same token when the total demand slackens you cannot expect to see the same rate of increase in our rated capacity, as occurs when customers want as much, and more, than we can produce. A man does not add extra rooms to his house when the children are going off to school. You will make a mistake if you take the Canadian capacity figure in 1931 and the figure in 1950 and divide the difference by 19 to estimate the Canadian industry's potential annual increase of capacity. If you do this you will come up with a figure of about 58,000 tons average annual increase, but this ignores the fact that throughout the thirties demand was so low that there was a large amount of idle capacity in Canada and little incentive to increase it further, and during the war years both demand and supply were curtailed by government order. The only years since 1918 when demand has called for full capacity of the Canadian industry have been the last four years since 1947, and in those years the mills have added an average of 150,000 tons a year to their rated capacity. This is perhaps a better indication of the annual building potential of the Canadian industry provided demand is pressing and economic conditions permit the sound investment in additional capacity.

It must be admitted that the defense programmes in both Canada and the United States are likely to make it difficult to maintain the rate of expansion of the last four years. Already there are cases where deliveries of new equipment and machinery have postponed expected new expansions. No one can tell how serious the impacts of the defense programme will be on Canadian private investment, but some slowing-up of the recent rate of expansion appears to be inevitable.

There may be other defense developments that will make it difficult even to maintain production at present capacity. Our best analysis of the pulpwood situation over the next twelve months is that we will have a very tight fit. The mills have put forth every effort to get all the pulp wood possible during the past season. They are planning unusually heavy operations during the summer months and a maximum programme for next fall and winter. If they get the labor needed and do not run into bad weather conditions they should obtain the wood necessary for capacity production, but this will only be possible if extraordinary and expensive efforts are put forth to get the wood cut and down to the mills in time.

Another raw materials danger is sulphur of which you have heard a good deal in recent weeks. There is no doubt that the Canadian and American pulp and paper mills are short of sulphur, and that if they cannot obtain greater supplies of this essential material than are now in sight, capacity production cannot be maintained. In Canada we are doing everything we can to develop alternative sulphur sources and several projects are now under way and others are being developed. These will take some time to come into production and before long we will be going to your sulphur producers and your control authorities in Washington to lay the situation before them and see if necessary interim supplies of sulphur to maintain capacity production can be made available.

There are other possible shortages of raw materials that may reduce production. The supply of copper, bronze, and other metals for machine wires is causing some concern. Wool and cotton felts may become difficult to obtain. There are possible labor shortages in the woods and at the mills. None of these supply situations can be regarded as critical at the moment but any one of them may become serious at any time. I can only say that the Canadian industry will do everything it can to solve these difficulties, consistent always with its responsibilities and readiness to accept its share of the common sacrifices imposed by our defense programme.

The other major qualification to the estimates I have given of your probable newsprint supply in 1951 is the possible impact of government controls both in Canada and the United States. Such an impact may come in various ways. There could be a rationing order which would cut down your consumption, but without meaning to enter into your domestic affairs, I must express the opinion, and the hope, that newsprint rationing should not be necessary at the present high levels of supply and even at levels slightly lower than those now in prospect. It may well be that you will have a number of individual supply problems—the so-called "distress cases"—that may be small in themselves and in total tonnage but capable of bringing in government controls unless they are solved. I hope you will again find it possible to deal with these cases as you did a few years ago during the decontrol period after the last war. I think conditions today are somewhat different than they were then, as you now have a tightening situation whereas in 1946 and 1947 you had an early prospect of substantial increases in supply. Perhaps you will need to apply less rigid and more flexible tests to these "distress cases" than you did then. I am sure Canadian mills will co-operate with you in carrying out any solution you find for these U. S. problems, but I must make it clear that the mills cannot supply extra tonnage that does not exist, and if any shipment is made to meet a new or special need in the U. S. it must come out of the supply of some existing customer. The decision as to where such tonnage should come from must be taken by you and not by us.

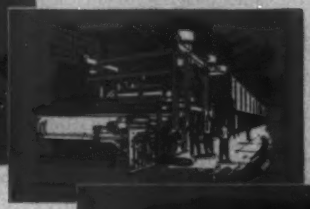
Another possible impact of controls is one I mentioned in the Buffalo speech I made last January. I said then that I thought any form of price control in the United States on Canadian sales of newsprint to your consumers would be bound to result in some loss of your newsprint supply from Canada. I tried to make it clear that I was not making any threat but simply analyzing the facts of the situation. Your present price freeze does not apply to imports of newsprint from Canada, but if a price ceiling were imposed by your government limiting what a publisher in the U. S. can pay for his newsprint, I think that would legally operate to suspend all your contracts with Canadian mills. I have no doubt that if it should come, your Canadian suppliers would struggle to keep newsprint flowing to you, despite the legal suspension of contracts. But they and the Canadian government are under heavy pressures to provide newsprint desperately needed in many countries throughout the world, and at the present time, the strongest argument against meeting those Overseas claims is the existence of valid and binding contracts with publishers in this country. Take that argument away—which may be a selfish argument—and I think these pressures may become irresistible —not, of course, for very large tonnages but for some loss of supply from Canada.

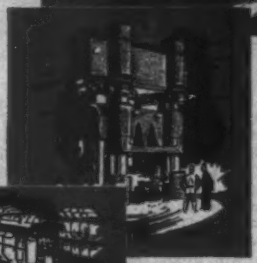
This leads to the question of the plight of many Overseas countries and the serious lack of newsprint for their essential needs. In all friendliness, I urge you to look at this situation in a sympathetic and constructive manner. There are several points about the world distribution of newsprint I would like to make.

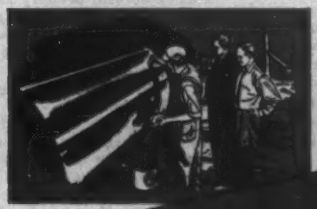
In the first place, I do not for a moment accept the argument that U. S. newspapers are "hogging" a disproportionate share of world supply — that they are newsprint hoarders lacking in understanding or goodwill toward the rest of the world. That is not your nature or your record. When I spoke last October to the Inter - American Press Association here in New York I tried to make this plain when I gave some statistics of world distribution. I repeat what I said then, "From these facts it would be easy to jump to the conclusion that the U. S. has been greedy and has, in some way, been unfair in acquiring an unduly large share of the world's newsprint. . . . Such a conclusion is not accurate. It confuses cause and effect. The proportionate share of newsprint going to the U. S. has increased not because U. S. consumers have unfairly cornered supplies but because consumers in other countries have been forced by economic conditions to reduce their consumption." There can be no doubt that, by any commercial test, U. S. publishers have been prudent and far-sighted and have had the economic ability to be so. Equally there can be no doubt that consumers and governments in other coun-

Now! one-source help on every application of petroleum products:

GULF PERIODIC CONSULTATION SERVICE







Now you can get practical help on any problem that involves a petroleum product—any type of petroleum product—from this single source: GULF PERIODIC CONSULTATION SERVICE.

Through this advanced cooperative plan, Gulf makes available to you the regular counsel of one or more trained engineers, men who are skilled in every phase of petroleum science—men who have years of experience with practically every type of process and equipment employed by industry.

This knowledge and experience can be applied profitably to your operating and maintenance problems. Send the coupon below for your copy of the booklet "Gulf Periodic Consultation Service," which describes this cost-saving service. Or contact your nearest Gulf office.

Send for your copy today!

GULF

Gulf Oil Corporation · Gulf Refining Company
Room 3-SZ, Gulf Building, Pittsburgh, Pa. PT

Please send me, without obligation, a copy of the booklet "Gulf Periodic Consultation Service."

Name.....

Company.....

Title.....

Address.....

tries have been commercially short-sighted as a result, in most cases, of their financial and economic weakness in recent years. The trouble is that when you have said all this you are still faced with the hard fact that, whatever the cause, newsprint supplies in many countries are inadequate to maintain essential information to peoples who are friends and allies of ours in a world struggle and whom we want to keep democratically strong. I believe we have moved beyond purely commercial tests.

To solve this problem of providing essential supplies of newsprint to other countries, the first thing we should look at is the possibility of increasing production, especially in or near those countries themselves. At first sight, the figures are encouraging. Last fall our survey indicated 650,000 tons of idle newsprint capacity in the world, all of it outside North America; and there are indications that the total today might be 700,000 tons. But when you look at it again, it is less hopeful. Some 80,000 tons in this total are behind the Iron Curtain. There used to be 35,000 tons of newsprint capacity in Korea. Japan has 170,000 tons idle, and their sources of wood and pulp have largely disappeared. These account for nearly half the total. In the United Kingdom, France, and Scandinavia there is a total idle machine capacity of over 250,000 tons. One would naturally ask why these experienced producers would leave machines idle if they did not have to, especially at a time when newsprint demand is insistent and prices outside North America have reached fabulous levels. The answer in some cases may be that the machines are being used to make other products that are also urgently needed, such as paperboard, building papers, and other products. But our information is that in most cases the answer is lack of pulpwood to operate the idle machines. There has been some overcutting of European continental forests during and since the war; in Scandinavia where forest usage is carefully restricted in line with forest growth, production has had to be adjusted downwards to the annual forest growth. The basic difficulty in Europe springs from the fact that before the war the forest industries of Western Europe relied on an annual import of 3 million cubic meters of pulpwood from the present area of the Soviet Union and these imports are no longer available.

I agree that every effort should be made to stimulate production wherever there is idle machine capacity and I have no doubt this will be a first concern of the International Materials Sub-Committee on Pulp and Paper. But, on the facts now available, it is very doubtful that a remedy through increased production will be large enough, or come soon enough, to meet the immediate problems of Overseas markets. If these needs are to be met they can only come from North America, and since there is no surplus supply on this continent they can only come out of tonnage now contracted to North American consumers. These are hard facts. No one likes them. No one likes to see interference with contracts, least of all Canadian mills. The issues involved are difficult and complicated, and I am glad that they do not fall to be decided either by the Canadian newsprint industry or by the Canadian government. I suspect, however, they are in good hands. The title to six million tons of newsprint in 1951 is vested in the citizens of the United States. Your nation is exercising enlightened and far-sighted leadership of the democratic world, and this problem of newsprint distribution rests at the core of your international policies. I hope you and your government officials will be careful, cautious, tough—in sifting the claims of need that are presented to you, but I am sure, if real need is established in this field the response will be what it has been in so many other fields in recent years. After all, if you provide supplies to meet proven needs of newsprint in other countries, you are only supporting the principles of democracy that are basic and fundamental traditions of the American press.

I would not want to leave an audience such as this without a word about one of the great international issues that is of vital concern to your country and mine and is largely in the care of our two industries. I believe that the American publishing industry and the Canadian newsprint industry have, at this moment, a great responsibility and a great opportunity. We have wider and more important issues to think about than the number of tons of newsprint we can ship to you, or the difficulties of getting sulphur or machine wires or pulpwood. A few days ago our Minister for External Affairs, Mr. Pearson, made the statement that "the days of relatively easy and automatic political relations between Canada and the United States are over." He said there was much mutual understanding and fundamental friendliness between the two countries but relations would not always be easy and smooth; there would be difficulties and frictions. Now what can we do, our two industries, to help solve those difficulties and smooth those frictions? I suggest to you we can do much. The Canadian pulp and paper industry is Canada's greatest business enterprise and newsprint accounts for about half of it. Your publishing industry is the greatest power influencing American public opinion. I hope that these two great industries can make themselves a model of international understanding and tolerance and mutual support, and in so doing make a major contribution to the strengthening of Canadian-American friendship. It is something we should not take for granted, something we should work at harder than we have ever done in the past, something that is vital to both countries in the kind of world in which we now live.

CUSTOMS COURT CASES

The United States Customs Court has held that there is no Finnish or export value for kraft test liner board meeting United States Governmental requirements for corrugated board shipping containers. An American importer ordered kraft test liner board in Finland, of a quality not used in that country, and entered the merchandise for duty at the price actually paid. The Customs officials collected duty on the basis of comparable Finnish paperboard and the importer protested to the United States Customs Court. The Court held that there is no freely offered value in Finland for such tailormade paperboard, but also that the importer could not claim as an export value the price he actually paid for shipments not a normal export commodity. The Court thereupon sustained the Customs officials' ruling except as to inclusion of a Finnish inland tax. The value of the shipments involved was approximately $500,000.

Hard sized Belgian paper has been held by Customs officials to be dutiable as writing paper and not at the claimed lower rate for book paper. Gasket board from Canada has been classified for duty at the rate for shoe board, and not at the lower rate for fibreboard, because it is a shoe board quality, even though it may be used for other purposes. A photographic mounting black paper has been classified for duty as paper not specially provided for and not at the claimed lower rate for cover paper. Imitation cork paper for cigarette tipping has been classified for duty as coated paper and not at the rate for cork paper.

ASK FREIGHT RATE INCREASE

OTTAWA — Railways have applied to the Board of Transport Commissioners for a general freight rate increase of 14 percent or 15 percent with special rates on several primary products kept down by ceilings, including pulpwood. The last mentioned limitation is the first implementation of the recent recommendation of the Royal Commission on Transportation limiting boosts on basic commodities. This may save shippers of such basic products $4 million or $5 million annually, mainly benefiting long haul shipments. For instance, on pulpwood, top increase allowed would be two cents on 100 pounds regardless of the distance.

If these new increases are granted by the Board, the cumulative total of postwar freight rate boosts would be 72 percent.

MORRIS GINTZLER HONORED

On April 20, at the Empire Lounge, Biltmore Hotel, New York City, a group of old employes and close friends of Morris Gintzler, chairman of the board of the Pulp & Paper Trading Co., gathered at luncheon to pay tribute to him on his seventy-fifth birthday.

MODERNIZED LOBDELL ROLL GRINDER

Photograph courtesy of Manhattan Rubber Division

at RAYBESTOS-MANHATTAN, INC.

MANHATTAN RUBBER DIVISION

Passaic, New Jersey

Installed in 1937 at Charleston, S. C., this No. 5 Grinder was recently modernized and put into operation at the Passaic, N. J. plant of this company.

Mounted on a recessed foundation, this machine—equipped with dust removal system and auxiliary extension mechanism—now has the capacity to grind 60-inch diameter rolls with 288-inch face.

Perhaps, you too, have a Lobdell grinder that has been in service for years. Our representative will be glad to discuss MODERNIZATION.

LOBDELL UNITED COMPANY

1836 WILMINGTON 99, DELAWARE 1951

A SUBSIDIARY OF UNITED ENGINEERING AND FOUNDRY COMPANY

Hardboard from Wood*

Eduard Farber[1]

Hardboards of medium density and hardness were produced from hardwood chips. These chips were treated by a chemo-mechanical process to obtain pulp of specified degree of fiber hydration. The boards were primarily designed for use as the face material of wirebound boxes and were found to perform satisfactorily.

General Principles and Special Cases

When a new industry grows, there usually is an accompanying development of literature describing, protecting, or praising the new accomplishments. The literature of hardboard manufacture has been growing in direct proportion to the increase in hardboard production. In a search which was admittedly incomplete, the writer found about 45 United States patents on various compositions, methods, and machinery. The 1948 meeting of this Society was enriched by three reports in this field; one concerned a special method for fiberizing, another described the use of the disk mill to prepare materials for paper and board manufacture, and the third are effects of variations in manufacturing procedures. *(1)*

A one-day conference devoted entirely to wallboard was held in 1949 under the auspices of the Northeastern Wood Utilization Council. The report about this conference has been published *(2)*. Another publication compares the characteristics of the wet process, in which the cellulose materials are used in the form of fibrous slurries, with those of the dry process in which wood particles are combined with resins. *(3)*

Surveys of materials, processes, machinery, and costs can be found in this literature. The purpose of the present paper is mainly to describe development of a special hardboard, its background and particular use. This development started out with a new method for converting hardwood waste into pulp. The special properties which distinguish hardwoods chemically from softwoods were put to use. Pulps were obtained in yields of 85 to 90 percent of the original hardwood substance. From this material a hardboard of medium density was produced for use as the face material of wirebound boxes.

Generally speaking, a variety of board can be obtained because the properties of the fibers can be modified by mechanical grinding and chemical additions, by combining or felting pretreated wood fibers, and by further treatment and conditioning of the materials thus produced. It is thus possible, through selected operations, to produce boards for different uses. In a new development there is a certain advantage in starting out with the aim of obtaining a board for a special application. It may be that with the great increase of interest in the manufacture of boards, specialization will take great strides in the future. Hardboard will then become a general name for a group of specifically different materials, although there might not be quite as much difference between them as between all the special kinds of plastics which are included under the general name of synthetic resins.

High Yield Hardwood Pulp

Methods for converting wood into pulp originally developed in two entirely different directions. By one method all the wood substance was utilized and disintegrated into fibers by wet grinding. By the other method, as much as possible of the noncellulose substance was removed from the wood, to the extent of losing a little cellulose in the process, so that the yields were 35 to 45 percent. The gap between these two methods began to be filled about a quarter century ago. At that time the first methods were described by the Forest Products Laboratory in Madison, in which only a part of the noncellulose was removed from the wood, and pulp was obtained in yields of over 65 percent. The new method developed at the Timber Engineering Company laboratory represents another step in the direction of reducing the extent of chemical attack on the wood in preparing pulp.

Hardwoods appear particularly suited for this step because they yield to certain mild chemical influences more readily than softwoods. The amounts of substance which is easily solubilized by the action of steam, dilute acid, and dilute alkalies is considerably greater for hardwoods than for softwoods in general.

By removing only between 10-15 percent of substances soluble under mild chemical action upon hardwood chips, the wood may easily be separated into its structural fiber elements. The chemical pretreatment has at least two functions in the production of this pulp. The energy required for this separation of the fibers is reduced, and kinds of fibers result which have the complex affinities for water and properties of felting essential in board making. This way of describing some of the effects of the chemical pretreatment is not very scientific, but for the present purpose it is unnecessary to penetrate very deeply into the complexities of hemicellulose chemistry. It may suffice to mention that the chemical action on the cellulose content makes itself felt in the particular kind of contraction and hardening of such pulp on drying.

The influence of chemical pretreatment manifests itself during the fiberizing operation in the strength of a sheet of the pulp obtained with relatively low power consumption. When wood chips are passed through a disk mill, the intricate actions of rolling, grinding, crushing, and cutting are governed by the form and distance of the rotating grooved plates, the temperature of the shower water, and particularly by forces that hold the fibers together in the wood. When these latter are appropriately reduced, the energy supplied to the disk mill will not be spent to an undesirable degree on crushing and cutting. By thus concentrating the energy on the desirable part of the action on wood chips, an increase in energy consumption will improve the pulp properties; for example, with chips from mixed hardwoods after the mild chemical pretreatment the results given in *Table I* were obtained, using a Bauer disc mill at zero opening and 107°F. shower water.

TABLE I.—COMPARISON OF POWER CONSUMPTION WITH PULP SHEET PROPERTIES

Power ..... H.P. days/ton	22	12
Freeness, New Green	411	680
Mullen bursting strength, percent	17.7	6.15
Tearing strength, percent	3.9	5.3

Pulp and Board

The role of water in such a grinding operation is of a very complex nature. The water in which the chips and the fibers are suspended is not only an inert carrier, nor is it only a cooling medium to dissipate the applied energy in the form of heat. There is a definite exchange of chemical material between wood fiber and water. To understand this, it may be helpful to recall the experiments which show that cellulose, suspended in water containing heavy water, in a surprisingly short time contained some heavy hydrogen acquired

[1] Timber Engineering Co.
* Presented at the Fourth Annual National Meeting of the Forest Products Research Society.

Introducing

AN ENTIRELY NEW WET STRENGTH RESIN

UFORMITE 700 is such a remarkably different wet strength resin that we've racked our brains for a spectacular way to describe it. We finally decided to let it speak for itself. It will, if you'll just write for a sample. But until the sample arrives, here's an idea of what to expect.

1. ***Fast wet strength*** **right off the machine.**
2. ***High efficiency*** **over a wide range of resin-to-pulp ratios.**
3. ***Adaptability to almost any furnish,*** **from unbleached kraft to rag.**
4. ***Extreme ease of mixing,*** **without acid, aging, or special equipment.**
5. ***Wide flexibility*** **in point of addition, from wire to beater.**
6. ***Convenient pH control,*** **with acid, alum, or mixtures of acid and alum.**
7. ***Not critical*** **to sulfate ion concentration.**

UFORMITE is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

THE RESINOUS PRODUCTS DIVISION

Washington Square, Philadelphia 5, Pa.

Representatives in principal foreign countries

by exchange of hydrogen between the cellulose and the heavy water. *(4)*

In paper maker's language, hydration indicates a relationship between fiber and water which goes just a little beyond mere physical absorption. A measure for this relationship is the rate at which water drains from the fiber slurry. This rate is designated as freeness. Pulp of high freeness is desirable because this means easy and speedy removal of water to consolidate fiber. High freeness has to be combined with good formation of the fibers to produce a strong sheet. As usual, in practical application we have to try to reach a balance. For best results we have to be satisfied with a medium degree of freeness in order to obtain a pulp of sufficient strength. When water leaves the fiber slurry too readily, in many cases the fibers are insufficiently interlocked to form a good bond. A medium degree of freeness, measuring between 600 and 700 in the Schopper-Riegler scale, is used for the main part of the pulp in the furnish.

When wet grinding or hydrating of wood fibers is continued to a much higher extent, the pulp becomes increasingly less free, so that finally the drainage is very slow. Usually, a very slow pulp is undesirable, because it cannot be handled on high-speed machines, or it would require a considerable increase of filtering surface on the machine. However, such very slow pulp has the desirable property of developing great strength on drying. It can be compared to a gelatinized starch and has, therefore, been called gelatinized wood (or gelwood). The merit of such gelatinized woods as a binder in board making was discovered by Howard Weiss. *(5)* The addition of a small percentage of this material to pulp of high freeness reduces the freeness somewhat, but not critically, and produces increased strength in boards made from the developed high-yield, hardwood pulp developed by the Timber Engineering Co.

Manufacturing Procedures

The basic ingredients for making these boards are a high freeness pulp combined with a small proportion of very slow pulp. Both are obtained in the form of slurries containing between 2 and 5 percent wood fibers. Boards made from such a composition have insufficient water resistance. This can be improved by adding water repellents. For example, paraffins or asphalt added in amounts of 2 to 5 percent of the dry weight of the pulp will reduce the water absorption considerably. When light color is not a primary requisite, asphalt, in the form of emulsion can be used. After adding the emulsion to the fiber slurry, it is necessary to demulsify by means of alum or, generally, by producing a slight degree of acidity which does not have to be below pH 5.5.

Once the composition of the chemicals has been decided upon, the manufacturing procedure is relatively simple. The slurry is placed on a dewatering screen, subjected to pressure in order to remove free water, and finally dried. In the laboratory and in relatively small-scale production, this can be done on batch filters to obtain a wet mat, with subsequent pressing of these mats on forming screens separated by plates. Several kinds of machines are available to carry these procedures out in continuous operation. Ingenious devices have been constructed for automatic pressing and drying of such boards.

The use of very free and very slow pulp in mixture is only one example of the possibilities of manufacturing procedures. With the same kind of hardwood pulp as the basis, other materials than slow pulp (gelwood) can be used to obtain the desirable degree of formation and strength. Synthetic resins can be used in limited quantities. It is not only the high cost of these resins which demands that the quantities be restricted to very low proportions; in addition, boards made with relatively large proportions of synthetic resins, while of great hardness, may be increased in brittleness. Melamine resins used in proportions of only 1 to 3 percent have proven efficient as binders without giving objectionable brittleness.

All pulp from hardwoods is short-fibered. It is advantageous to add some long-fibered materials where high elasticity and strength are required. The influence of fiber length on strength properties is another of those complex relationships which have been mentioned before. For straw boards, Lathrop *(6)* was able to show a very definite correlation between strength and length of fibers and, particularly, to select the appropriate proportions for optimum results. For fibers of other origins, not only the length, but the felting properties, and something that can only be vaguely described as affinity to the hardwood fibers are to be considered. For our purpose, mixtures of 80 pounds of our hardwood pulp with 20 pounds of a kraft-type softwood pulp proved highly satisfactory, particularly when combined with gelatinized wood made from the hardwood pulp.

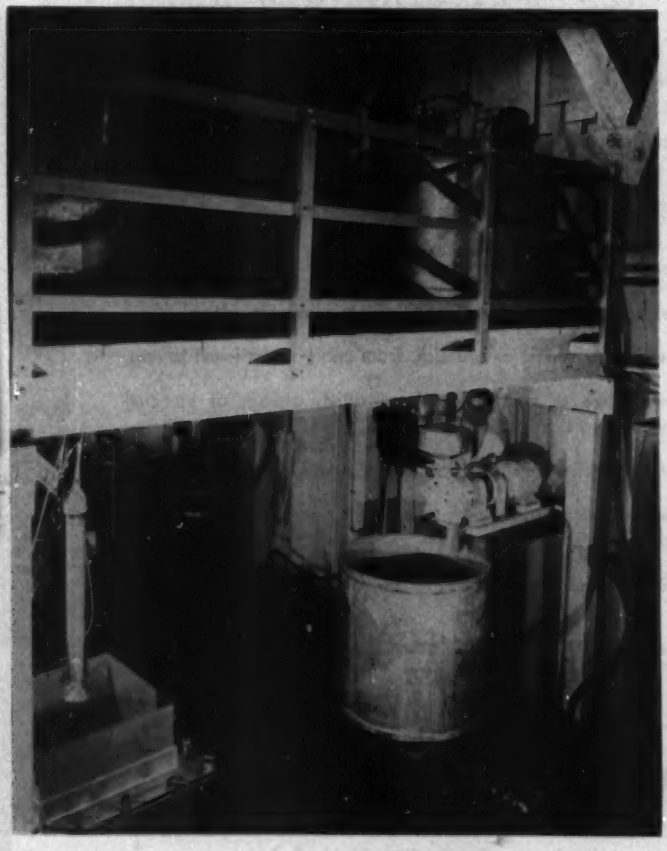
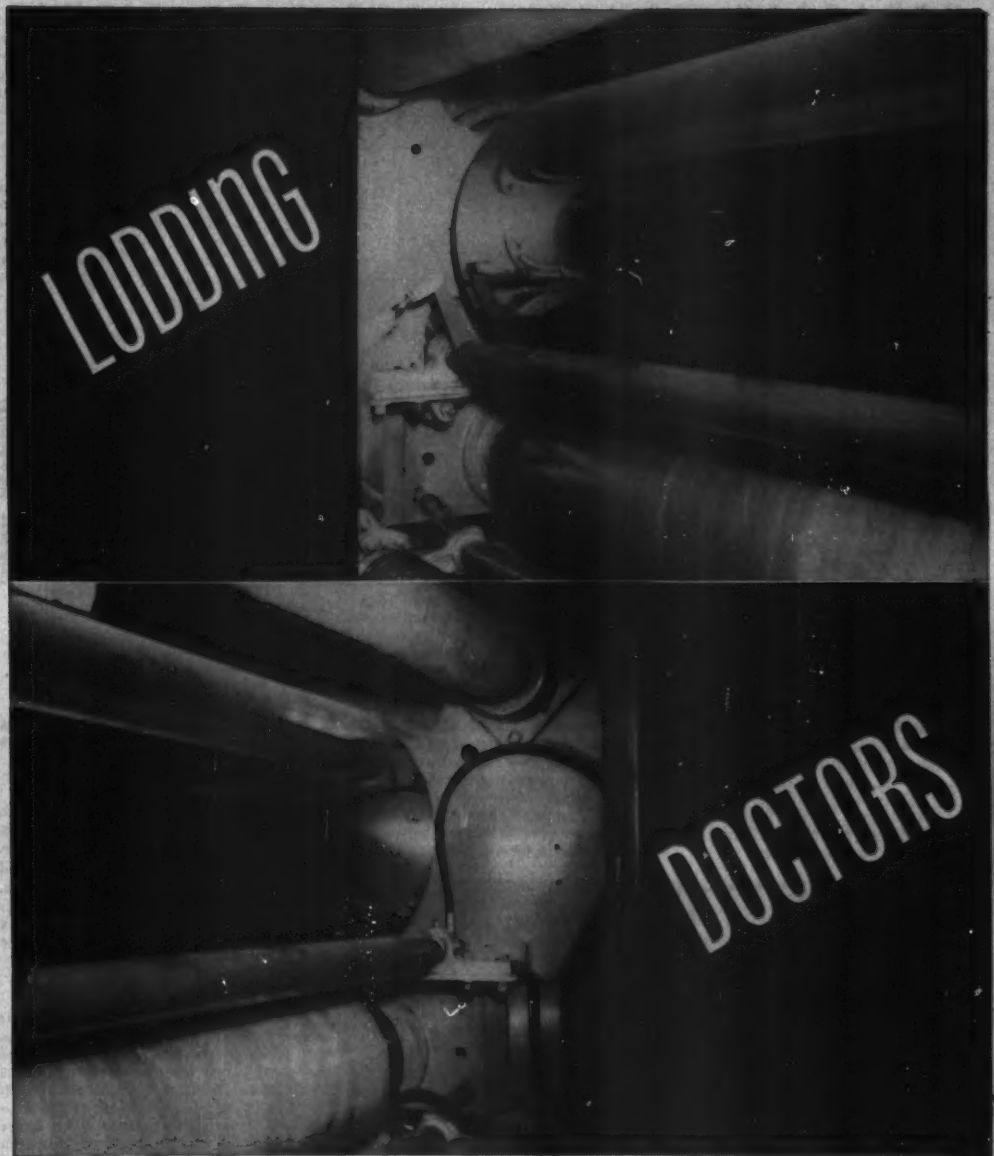


Figure 1—Pilot plant for pulp and board making



Reflecting the quality of
Lodding Oscillating Supercalender Doctors

•

Lodding Engineering Corporation, Worcester, Massachusetts
Represented by W. E. Greene Corporation,
Woolworth Building, New York.

TABLE II—COMPOSITION AND CHARACTERISTICS OF HARDBOARD

Specimen number	51	58	216	230	gum veneer
Pulp	Teco	Teco	Teco and 20% Kraft	Teco and 10% straw	.....
Binder	11% gelwood	3% melamine resin	10% gelwood	10% gelwood	.....
Thickness	0.170	0.170	0.195	0.200	0.125
Spec. grav.	0.75	0.75	0.74	0.71	0.525
Weight, grams per sq. ft.	293	306	339	336	146
Maximum bending load, pounds	116.0	117.0	104.0	98.0	170.0
Toughness, inch-pounds	6.64	6.51	6.94	6.14	9.60
Water absorption, per cent:					
*2 hrs.	10.3	10.6	14.4	15.6	.....
24 hrs.	34.2	41.4	44.5	55.3	.....

Testing Procedures

I mentioned at the beginning that this particular hardboard was to be used as the face material for wirebound boxes. The tests were designed to indicate those properties which most likely would be important for this special use. The goal was to reach the strength properties of gum veneer. This therefore served as the basis for comparisons.

The main strength tests were those for static bending, toughness, and staple-holding. These tests were designed to approach conditions significant for the endurance of a box. A short span was therefore used in bending, and the behavior of the board in stapling it to wood was investigated. Strength and resilience are thereby measured.

Static Bending Tests

Pieces 4 by 6 inches were tested over a 4-inch span in a Baldwin-Southwark testing machine. The load was applied in the center of the span at the rate of 0.1 inch per minute. The end point was defined as a definite failure of the test piece. The maximum load at this point was determined.

Toughness

Specimens ½ inch wide and 10 inches long were tested over a 4-inch span in a machine built according to the Forest Products Laboratory design. The load was applied by means of the free-swinging pendulum. The energy absorbed in breaking was measured in terms of foot-pounds.

Staple Holding

The staple-holding test was designed to measure the lateral load required to pull staples driven through the board into a wooden cleat. The piece of board 2.5 by 4 inches was connected to wood by staples made from wire of 0.063-inch diameter. Two staples, each ½ inch away from the edge, were driven straight into the cleat by hand. A piece of wire positioned under the staples had a diameter of 0.081 inch. This assembly was clamped in the testing machine. The rate of pull was determined by a platen speed of 0.025 inch a minute. The load at the point of failure was registered. In most cases failure consisted in the pulling of the staples through the board. Sometimes tension failure between the staples was observed.

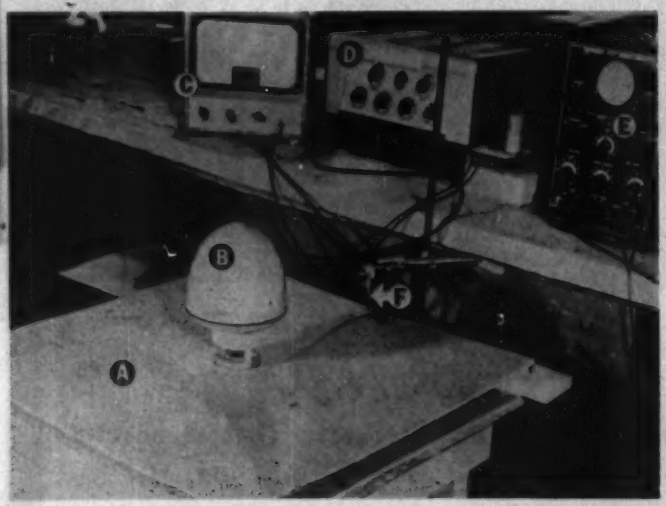


Figure 2—Apparatus for determining resonant frequency of fiberboards. A, board being tested; B, electrodynamic vibration; C, audio oscillator; D, power amplifier; E, oscilloscope; F, crystal pickup

In addition to these tests, which were amplified by other special arrangements and by the usual kind of water-absorption measurements, a nondestructive test based on determination of resonant frequencies was developed. The assembly used is shown in *Figure 2*.

Influential Factors

The most desirable board is one which combines high strength in bending with great toughness, and can be manufactured at low cost. Usually, however, when testing modifications, it will be found that those which increase strength in bending will tend to reduce toughness. The accompanying *Table II* shows some of these results.

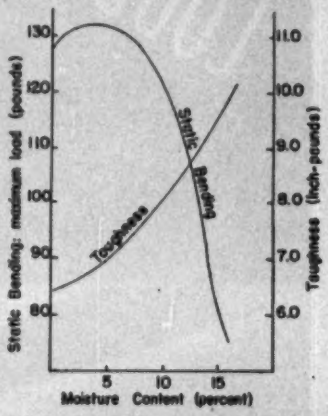


Figure 3—Change in static bending strength and toughness of hardwood pulp boards with moisture content

Moisture content also has a decided influence on these strength properties. *Figure 3* gives an example for the increase in toughness, accompanied by a loss in bending strength when moisture content is increased.

Performance Tests

The ultimate test for boards of this kind is their performance in actual use to make wirebound boxes. In this kind of box, panels are combined with wires and staples which are held to wooden cleats in the manner illustrated in *Figure 4*. A great number of such boxes were made in the Package Research Laboratory of the Stapling Machines Company, Rockaway, N. J., loaded in accordance with special experiences of the Package Research Laboratory, and tested by tumbling in a 14-foot drum provided with specially designed hazards. The number of falls until failure begins and, after continued tumbling, until a definite break occurs are recorded. Some of the results obtained with particular compositions of board for the face materials are represented in *Table II*. It will be seen that some of these boards perform very well. The correlation between the tests of actual performance and the single quality

TIMELY HELP FROM TITANOX RESEARCH:

TITANOX pigments can help keep you rolling

TITANOX pigments can help you get the most out of your present supplies in meeting current demands for many types of paper. TITANOX research has developed titanium dioxide pigments specially suited to paper making and has established definite recommendations for their use. These TITANOX pigments will enable you to accomplish the following economically and with no loss in fiber strength: Increase brightness and opacity... Increase opacity while maintaining constant brightness... Overcome the transparentizing effects of resins and waxes... Limit show-through of light-weight papers... Reduce the weight of paper while maintaining opacity... Overcome the darkness of low-colored pulps... Brighten tinted papers and minimize after-yellowing.

TITANOX-A-WD—the water dispersible pure titanium dioxide pigment—is recommended for addition to the beater, but is successfully used in coating. The rutile-calcium pigment TITANOX-RCHT is also recommended for coating. Each pigment is characterized by fine and optimum particle size which affords maximum whiteness, brightness and opacity... ensures easy mixing and complete dispersion.

Our Technical Service Department is always available to help you get the most out of your present pulp supply through the use of TITANOX pigments. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; Boston 6; Chicago 3; Cleveland 1; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 9, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Ltd., Montreal 2; Toronto 1.

8T03

TITANOX

the brightest name in pigments

TITANIUM PIGMENT CORPORATION

Subsidiary of NATIONAL LEAD COMPANY

TABLE III.—RESULTS OF ROUGH-HANDLING TESTS ON ALL-BOUND BOXES MADE OF TECO HARDWOOD PULP FACE BOARDS[1]

Board characteristics:	Gelwood		Gelwood and Kraft	Melamine resin	
Binder used					
Thickness average ..... inches	0.191	0.182	0.141	0.219	0.223
Weight M.S.F. ..... pounds	685	7e5	5e4	824	893
Specific gravity	.69	.80	.77	.75	.87
Flexural tests, 3" span:					
Max. load ..... pounds	94	103	34	160	162
Puncture test ..... G.E. units	990	990	602	1,020	1,272
Boxes:					
Test loads ..... pounds	150	150	100	150	150
Number of falls:					
Air-conditioned:					
First serious failure	23	46	25	19	43
Final failure	50	83	35	31	61
Conditioned at 85° F., 92% R.H.					
First serious failure	.....	.....	48	.....	94
Final failure	.....	.....	48	.....	108

[1] Inside dimensions of boxes: 20" x 16" x 12".

tests on specimens is shown in *Table III*.

Forests and Industries

The question may be asked why, in this particular case, a so-called synthetic board should be developed and investigated when it is known that the material for this application can be produced by converting logs into veneer. The reasons are manifold and connected with a number of technical and commercial aspects. When we produce synthetic rubber, even at times when natural rubber is available, we try to accomplish at least two purposes. One is to be independent of supplies from crops and influences of such complex nature as weather and transportation. The second purpose is to produce materials in which properties can be variously combined and qualities improved. This is only an example; not all features which characterize it can also be applied to our present case. While the raw material used for synthetic rubber has nothing to do with that for natural rubber, our raw material for synthetic boards is in substance the same as that for what may be called the natural board for which veneer is used. The same in substance does not mean the same in availability and value. We start from the by-product necessarily produced when using trees to make lumber, veneer, and manufactured materials. While situations may arise, and have arisen, in which the natural material, veneer, is in short supply, the by-product for the synthetic material will always be available as long as the main products are being made. With respect to that second purpose mentioned above, the situation for the synthetic board is much more nearly comparable to that described for the synthetic rubber. The effort of synthesis starts with the goal of obtaining a material that is equivalent to the natural one; then, however, avenues are opened up which lead to possibilities of further improvements.

Acknowledgment

The development of this hardboard was sponsored by the Stapling Machines Company.

Figure 4—Condition of all-bound box of Teco hardwood board after 20 falls in test drum. Final failure occurred after 81 falls.

The stimulating interest of Henry Wolsdorf, vice-president of the Stapling Machines Company, and the permission to publish this report are gratefully acknowledged. Matthew Sciascia, of the Timber Engineering Company staff, had a prominent part in carving out this work.

REFERENCES

1. "Proceedings, National Annual Meeting," FPRS Vol. 2 (1948), papers by U. Lowgren, p. 83; C. K. Textor, p. 89; H. D. Turner, J. P. Hohf, and S. I. Schwartz, p. 100.
2. Northeastern Wood Utilization Council, Wallboard Production and Uses. Bulletin 31. New Haven, Conn. (1949)
3. Armin Elmendorf, *"Wood"* 5 30. (1950)
4. Frilette, V. J., J. Hanle, H. Mark. 1948. Jour. Am. Chem. Soc. 70: 1107.
5. Weiss, Howard. U. S. Patent Nos. 1,631,171, 1,631, 172 and 1,631,173.
6. Lathrop, E. C., T. R. Naffziger. 1949. Tappi 32:309-30.

PEOPLE

MAJOR-GENERAL HARRY F. G. LETSON, C.B., C.B.E., M.C., E.D., was appointed to the Board of Directors of the Powell River Co., Ltd. Named vice-presidents of the company are: RUSSELL M. COOPER, resident manager at Powell River; I. H. ANDREWS, formerly executive assistant; JOHN E. LIERSCH, formerly assistant vice-president; and John A. KYLES, formerly comptroller. H. JOHN BURNS, former assistant comptroller, has been promoted to the position of comptroller.

TIMOTHY F. MURPHY was elected president of the Continental Diamond Fibre Co., Newark, Del., on April 25. He succeeds the late Norris N. Wright. Mr. Murphy, who has been executive vice-president of the company since March 1, formerly was president and general manager of the Beach and Arthur Paper Co., Modena, Pa.

CHARLES A. CONNAUGHTON, now director of the Southern Forest Experiment Station in New Orleans, has been appointed regional forester for the Southern Region, with headquarters at Atlanta, Ga.

HARRY C. HARVEY, assistant secretary of the Sutherland Paper Co. in charge of cost accounting, has been summoned to Washington as one of the key men in the office of price stabilization for the paperboard industry.

D. H. KECK, midwestern district representative for Kimberly-Clark Corp., has joined the staff of the OPS as section head of Groundwood and Book Paper.

During Mr. Keck's temporary absence from his Chicago headquarters, G. L. DuBOIS will act as midwestern representative in addition to continuing in his capacity as southern representative.

CHARLES W. CARD has been named vice-president and a director of Coos Bay Pulp Corp. and plant manager of its Anacortes, Wash., mill, and JESSE R. LEWIS will assume the responsibilities of manager of operations. Also appointed vice-president and director were HARRISON F. DUNNING, general operating manager of all Scott mills, and HENRY S. GODSHALL, plant manager of the Empire, Ore., plant.

C. WYLIE SMITH, former vice-president and general manager of Coos Bay Pulp Corp., has resigned to become a partner in a lumber business in Coos Bay, Ore., and FORREST W. BRAINERD, formerly a director and vice-president, is now vice-president and plant manager of Falls Paper and Power Co., a Scott subsidiary in Oconto Falls, Wis.

SAMUEL M. LANGSTON CO. Camden, New Jersey

PAPER USERS—III OF SERIES

Paper In The Hotel Industry

Earl Hershberger[1]

When Mr. Statler opened the first Hotel Statler in Buffalo in 1908, he said, "A hotel has just one thing to sell. That thing is service." By long established custom, supplying free stationery to guests is one of the services performed by hotels, and with Statler's emphasis on service it is easy to see why the consumption of guest room stationery would be so large. Last year, each 100 of Statler's 3,766,067 room guests used:

111 sheets of writing paper
98 envelopes
100 memo slips
32 air mail stickers
14 post cards

Another obvious item is paper used for menus in the hotels' dining rooms. In the same year, the Statler restaurants used one menu for every nine of the 9,397,322 guests. Impressive as these figures may be, the paper used for these purposes represents only a small portion of the total annual consumption of paper. The exact percentage would depend on whether total paper did or did not include 6,027,000 book matches, for instance; or it might include the paper wrappers on 4,478,000 cakes of room soap, or 5,500 rolls of adding machine paper. These and other specialty items such as laundry boxes, caps for juice glasses, cocktail napkins, etc., as well as 75,000 paper drinking cups used as razor blade disposal containers, add to the total volume of paper and paper board. For the purposes of this discussion, these items will be ignored and our attention will be given to those paper and paperboard items usually associated with the printing and publishing industry.

Guest Room Stationery

Quality is the first requisite of guest room stationery, but this is quality as judged from the viewpoint of the user, and may differ from that of the paper manufacturer. For instance, we occasionally see samples of guest room stationery which has been processed on high rag-content paper. While there can be no doubt that this is quality stationery, in our opinion it represents needless extravagance or perhaps thoughtless selling on the part of some printer or paper merchant who used the same arguments, if any arguments were necessary, in selling this stationery that he used in selling the letterheads used by the executive offices of the company. These would be that the paper is an insignificant part of the cost of sending a letter, therefore the very best paper does not add materially to the expense. Obviously this does not apply to stationery which is handed out for someone else to use, and a few cents per thousand added to the cost — whether it be paper, processing or handling — does make a difference in the operating expense of the business.

The only complaints that we have ever had from the guests who use our stationery are that the paper is transparent, the envelopes do not stick, or that the writing surface is poor. Except for the last, these troubles are likely to increase with higher quality (if rag content is the basis of quality), therefore from both angles, price and performance, a sulphite sheet is quite satisfactory. Regarding the third complaint, except for the occasional sheet which is insufficiently sized, and therefore the basis for a legitimate complaint, these usually come from the guest who is a pressure writer or who may have selected a pen point, from the several in his room desk, which was too fine for his writing style.

It is our observation that the hotel guest will consider weight first when judging quality. If there is sufficient weight to give a good "feel" and if there is no basis for one of the above complaints, it is a good sheet of stationery as far as he is concerned. We therefore use 20 pound basis as a minimum and for certain items use 24 pound. For envelopes we require titanium filling to give opacity.

Any of the standard grades of No. 1 sulphite will fulfill all of the requirements of guest room stationery. As the price of one brand will be comparable with that of another, there is only personal opinion as to the superiority of color or finish to act as a guide in selecting the sheet to be used. In an organization such as ours, where we control the production as well as the use, the matter of press performance should be the most important factor and the one above all others on which selection is based. However, we have learned that there are too many variable factors involved, including the human element, for us to blame a single unfortunate experience on the paper which happened to be involved.

But this does not mean that we hold the paper mill to be completely blameless. If there are torn sheets which cannot be detected before they jam a press, excessive lint due to poor trimming, extreme variation in the size of sheets, or damaged sheets or reams due to improper packaging or casing—then we do blame the manufacturer for careless practices.

Certain mills have urged us to use their well advertised brand names because of the fact that their advertising has given the sheet public acceptance as one of quality. We recognize the value of a good name and a watermark has great value in helping to reassure the consumer that he is getting the proper value for his printing dollar. But it is our experience that beyond this the average user pays little attention to the watermark. On the other hand every mill representative and paper merchant will at one time or another (we hope) be a patron of a Statler Hotel. He is the one who will notice a watermark; if he sees none, he is not nearly so irritated as he is when he sees the name of a competing product. This is the principal reason why we prefer not to use watermarked sheets.

Following this practice we can vary the source of supply in any way which may suit our convenience. Any manufacturer who secures a Statler order has the comfortable feeling that he is the Statler supplier, even though he may have secured only a portion of the total quantity. On at least one occasion we have been told by a mill representative that he could not help but admire his sheet of paper as it was supplied to him in his guest room. We did not tell him that we were positive that the sheet he admired was not his own!

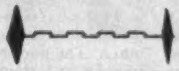
For the same reasons we are not interested in a private watermark. Such a mark ties the user to one source of supply and has the same adverse factors which a mill brand might have.

To give distinction to some of the paper which we use, we carry a laid mark. This has been a Statler practice for at least thirty years and we believe it has become a mark of distinction for our stationery. We do not insist that the laid marks which are supplied by different mills be exactly uniform—

[1] Statler Press, Buffalo, N. Y.

HOW IT WORKS

Supersonic waves are sent into the material under test. Upon reaching the other side, or upon reflection by a discontinuity, the waves return to their source and are then converted into a high-frequency potential. This potential is amplified by electronic circuits and projected upon the screen of a cathode-ray tube where they may be seen and examined.



Pulse pattern, showing the initial pattern at the extreme left and the reflection from the opposite side at the extreme right. The sweep line indicates no defects.

A typical indication of a defect is illustrated here. By means of calibration, it is now possible to determine both the exact position of the flaw, as well as its size.

Today, Supersonic testing is available on specification for inspecting Grinnell prefabricated piping. By observing the pattern produced by the electron beam on the fluorescent screen, any defects in the base metal, welds, or variations in pipe thickness can be located and measured at a glance.

Grinnell's ultra modern electronic testing can be relied upon to detect hidden flaws in pipe materials, to check unerringly the quality of welds where it picks up types of flaws not revealed by X-ray and gamma ray inspection. In examining bends, this type of testing can measure the degree to which bent pipe thins on the outside and thickens on the inside of the bend, assuring full specified thickness in high temperature, high pressure work.

Non-destructive Supersonic testing is another in a constant succession of new techniques employed by Grinnell to provide prefabricated piping which is safe and dependable . . . which measures up in every way to *rigid* state, national, association and insurance code requirements. It is another reason, too, why it will pay you to think of Grinnell "Whenever Piping Is Involved".

GRINNELL

WHENEVER PIPING IS INVOLVED

GRINNELL COMPANY, INC., Providence, R. I. Warehouses: Atlanta • Billings • Buffalo • Charlotte • Chicago Cleveland • Cranston • Fresno • Kansas City • Houston • Long Beach • Los Angeles • Milwaukee • Minneapolis • New York Oakland • Philadelphia • Pocatello • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane

we make use of the dandy roll which may be on hand. The investigator who chooses to get technical can thus determine the source of supply of any particular sheet.

To control quality we depend upon the integrity of the supplier. There was a time when we tested every sheet for tensile strength, stretch, and mullen, but we found out that these are not nearly so important as the more or less intangible qualities of color, finish and formation. We said above that any of the standard No. 1 grades of sulphite are satisfactory, and regardless of the claims of one mill as against the field, we have confidence in all of them and know that they are comparable in quality.

Prestige Papers

From all we have said so far, we have probably given the impression that we use sulphite exclusively. That is not so. We recognize the superiority of rag papers in appearance, permanence and wear, and when we desire those qualities, we use a percentage of rag which will give the desired result.

We use 100 per cent rag for our executive and private office use. We are convinced that nothing less, when coupled with sufficient weight, will measure up to the prestige which we like to associate with Hotels Statler Company, Inc. We use a lesser rag content for our general office use.

In the matter of permanence we are less definite and will have more to say on the subject when we discuss operating forms. As far as wearing qualities are concerned, we do not think that there is any substitute for rag—except the plastic which is often used for pocket calendars. For payroll and similar records, which are subject to constant handling, we use 100 per cent rag ledger; for credit cards, which are carried in a billfold for at least a year, we use 100 percent rag index.

Menus

Because of the large number of menus used by the Statler Company, many specialty mills think that we should be large consumers of their product — fancy cover papers. They point out that their papers are greaseproof, or soil-proof, or that they have excellent folding qualities. Actually we use very limited quantities of papers with such characteristics. They are valuable for menus which are designed for continuous use, but such qualities mean little for menus which are printed for every meal.

For easiest reading, under what is frequently subdued illumination, we want the greatest contrast possible which means black printing on a white background. Any colored covers which we may use must, therefore, be of a duplex type. Since this adds greatly to the cost of the cover, and because colored covers, regardless of how attractive they may be, make for an inflexible cover design, we seldom use them. We depend upon the printing to give color to the white menu stock which we do use.

We regard the finish of our menu stock as very important. We like a smooth finish for ease of printing (that is, the imprinting of the menu itself and not the printing of the cover design and rough or antique finish for "feel" and bulk.

A smooth finish gives ease of imprint because it allows good coverage with a minimum of ink and a minimum of pressure. Since our menus are often put into use within an hour after imprinting, the minimum of ink is important, and because of lack of time the printer cannot waste precious minutes in trying to obtain a uniform "kiss" impression. About all he can do is squeeze it hard enough so the whole form will print. This sometimes results in a menu which looks as though it could be read from the outside by the Braille system!

On the other hand, an antique finish will give quicker ink absorption and therefore gloves or hands are less likely to become smudged by fresh ink. Also, the added bulk gives a cover which has a more substantial and pleasing feel.

Obviously we must compromise between the two extremes of high and low finish. What we regard as ideal is just a little less than what would be regarded as a smooth or "high" finish. The surface which used to be characteristic of an offset paper, before most of them were given a high finish for halftone reproduction, is just about right. In fact, prior to 1940 we used offset almost exclusively for this purpose.

There are few cover papers on the market which have as their standard exactly the right finish for our use. This makes it difficult to select the proper cover and almost invariably, when we tell a manufacturer that his standard finish is too rough or too smooth he will go to the other extreme and give us one which is just as bad in the other way. Then when we tell him about this, he is sure that we are just trying to be difficult.

Sometimes the cover design or printing process demands a coated surface. To be consistent with what we have said above, it is necessary to use a coated-one-side sheet. Most sheets of this kind have a poor reverse-side color, or the finish does not serve menu purposes; this presents a problem which in desperation we tried to solve one time by using a light weight coated blotting. Although the blotting was the hard litho type it was still too soft to be an ideal menu; it appeared all right when first printed, but handling soon scuffed the surface.

The weight and thickness of covers which we use depend upon the size of the menu and the use to which it is put. Of course, we could increase the bulk, which we said is desirable, by increasing the basis weight of the paper. We buy paper by the pound, however, and use care in establishing the maximums or minimums which we use. Unnecessary weight not only increases the cost but also adds to the transportation charges and the storage problem.

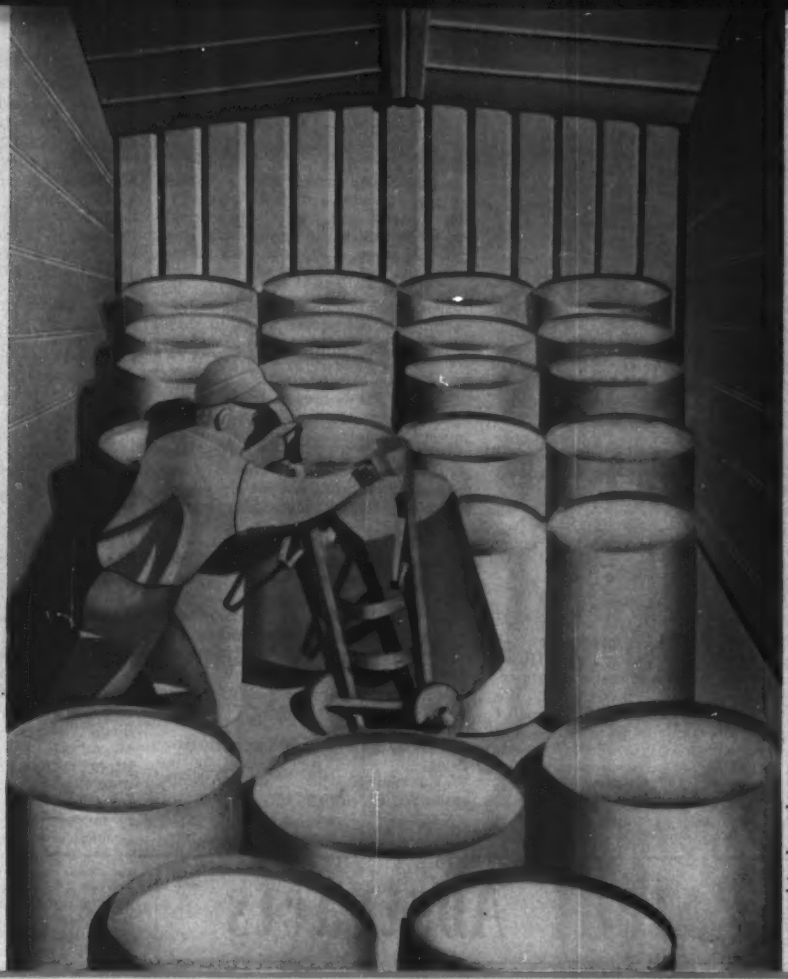
We have found that a basis 50 cover is sufficient for a folder with a page size of 7 x 9 or smaller, and that 65 basis is satisfactory for a page up to 9 x 12. For those menus which are not printed every day, such as breakfast, a la carte and supper, and which may be in use for a week or a month, we use basis 80 cover. The added weight gives sufficient stiffness so the covers do not become dog-eared too readily. It is for these menus that duplex covers can sometimes be used to good advantage.

This latter category should also include wine and drink list covers. If these can be moisture-proof they have added life and we frequently use lacquer finishes to accomplish this. This finish and a dark color will discourage doodlers who are the bane of many bars and who cause high-priced menus to go into an early discard. A more economical way to partially accomplish this result is to use one of the new high luster covers printed with gloss ink. When these covers are made in color, they will have had added value for this purpose.

Special Purpose Papers

In addition to the menu cover paper which we have described quite fully above, we would like to have a special bristol for restaurant checks. The sheet must be in the price range of sulphite index and should have a surface which will reveal erasures or other attempts to alter pencil writing. To accomplish this we have tried to use cylinder board with a white liner on one side and a colored stain on the other. The filler had to be light enough in color and stain thin enough so that attempts at erasure would cut through the color and be revealed by the light filler beneath. We found that if the surface was soft enough this worked quite well, but the soft surface made a poor appearing check and one on which it was difficult to write in the first place. We finally gave up our experiments, partly because of the large quantity we had to order with every attempt, but we still believe something could be accomplished along these lines.

These end our needs for special purpose papers, but we can cite one example, however, where we have used a paper with special characteristics which made it suitable for an entirely different purpose. Every Statler toilet seat is looped by a band of paper which says that the seat is sanitary. This band of paper is usually flushed down the toilet so we use mimeograph paper in which the lack of sizing enables it to dissolve readily and the possibility of drain stoppage is eliminated.



paper sculpture by pasaka-gan

quality...and service

come first at Niagara. Whether you order one drum or many, you get the same dependable high quality and purity of product.

NIALK* Liquid Chlorine
NIALK Caustic Potash
NIALK Carbonate of Potash
NIALK Paradichlorobenzene
NIALK Caustic Soda
NIALK TRICHLORethylene
NIAGATHAL*
(Tetrachloro Phthalic Anhydride)
*Trade-mark

NIAGARA ALKALI COMPANY

60 East 42nd Street, New York 17, New York

Operating Forms

Early in this discussion we said that papers for the purposes already mentioned represent only a small portion of total consumption. Not too small, for if we eliminate the specialty items previously enumerated and other similar items, this paper is about one third of the total. The remaining two thirds is made up of operating forms, sales promotion material, employee relation printed matter, etc.

Every modern business depends upon a complex structure of printed forms for its efficient functioning. The hotel business is no exception, but it may be exceptional in that the great majority of forms are of a temporary nature. Of the five hundred or more which are on our "List of Printed Forms" only 200 are dignified with a "time of retention" designation. The breakdown of these is as follows:

Temporary to six months	56
One year	42
Two years	28
Three years	12
Five years	29
Permanent (which means 10 years or more)	33

Because of this, permanency of paper is of little importance. If we use quality as synonymous with permanence no quality is required. We do not, however, go to the extreme of using newsprint for form work—not that it wasn't tried! It was our experience that forms printed on newsprint are wasted and encourage careless work. If you doubt the accuracy of this take a look at your own shipping room and observe how the railroads' newsprint bills of lading are tossed around, mutilated and wasted.

Conversely then, a neatly printed, useable form is more economical in the end. As far as paper is concerned a useable form is one with a smooth writing surface, sufficient weight so that it won't tear too readily, enough opacity so that it can be distinctly used and read among a litter of other forms, and sizing so that the pen user will not be discouraged by having his meticulous habits be a handicap to him. Fortunately the papers which fit these specifications are priced so that they are applicable to this highly competitive field of printed matter.

Such paper, with variation in weight as may be required by the purpose of any specific form, can be used for any "retention" group except the permanent. It could probably be used for most of these also, but we do not do so unless further knowledge of the use of the form leads us to believe that such paper would be satisfactory. Generally speaking, we use rag content paper for permanent forms.

We mentioned variation in weight—after we get above a 20 pound bond we make full use of the fact that proper attention to grain direction will make possible the use of a lighter weight sheet than would otherwise be feasible. This is especially true of restaurant checks, ledger cards, registration cards, etc. Some of our experience along this line was gained during World War II when it was necessary to reduce the weight in order to keep within our allowed quota of paper. We then found that the saving in filing space was an unexpected dividend, which has caused us in many cases to continue the use of the lighter weight material.

We have now covered in more or less detail all of the groups of hotel industry printing except employee relations printed matter and sales promotion material. The former includes our house organ, instruction manuals, etc., and the latter everything and anything which can be conjured up by an alert Sales Department and Advertising Agency. As far as paper is concerned, these groups do not differ from material which might be put out by any other industry, with the possible exception of this item:

We use large quantities of newspaper and menu stickers for advertising purposes. These are glued to the newspaper or menu and standard full-gummed paper could be used. But in order to prevent covering too much of the surface to which the sticker is applied we use strip-gumming along the edge. To reduce the expense of this operation and to save time in the final production we carry strip-gummed paper as a standard material. There is nothing unusual about this, and strip-gummed paper can be produced by any manufacturer provided he is given time and an order large enough to pay him for the set-up of his equipment. Not only in this respect, but in all others, we have found mills and paper merchants to be co-operative once they understand what we are trying to do. On our part, we reciprocate by not asking the impossible after their problems are explained to us.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

U.S. 2,541,631 — Process of Producing an Impregnated, Waterproof, Fibrous Sheet. Charles M. Baskin, Toronto, Ontario, Canada, assignor to Standard Oil Development Company. Filed July 29, 1944 — Issued February 13, 1951.

The process of producing an impregnated, waterproof, fibrous sheet which comprises impregnating fibrous material with a bituminous saturant, coating the saturated fibrous material on both sides with pulverized normally brittle asphalt, placing the impregnated pulverized asphalt coated fibrous material on a surface and treating the pulverized asphalt with a solvent flux to amalgamate the pulverized asphalt.

A waterproof fibrous sheet composition having a basis of fibrous material impregnated with a bituminous saturant and having applied to at least one surface thereof a surface layer of pulverized normally brittle asphalt.

U.S. 2,541,692—Paper Size. August S. Erspamer, Spring Grove, Pa., assignor to P. H. Glatfelter Company, Spring Grove, Pa. Filed January 14, 1947 — Issued February 13, 1951.

A paper size composition comprising an aqueous alkaline dispersion of a mixture of rosin and an ester of glycerol and maleic anhydride, said ester having an acid number of at least 250.

U.S. 2,541,762 — Dry-Wall Construction. Clark C. Heritage, Cloquet, Minn., assignor to Wood Conversion Company, St. Paul, Minn. Filed December 4, 1943 — Issued February 13, 1951.

A universal condensation-free wall comprising parellel spaced supports for the wall, lath and plaster on the warm side of said supports, a layer of material on the face of said plaster, said material being in film-like form and characterized by ability to transmit water vapor to a degree on the order of the transmissibility of a coat of paint, insulation sheathing on the cold side of said supports, said sheathing having on the warm-side face a layer of water-vapor resistant material characterized by ability to transmit water vapor to a degree comparable to a coat of asphalt, a layer of insulation having substantially no resistance to the transmission of water-vapor on the cold side of said sheathing, and a layer of overlapping siding elements on the cold side of said insulation, said two layers of water-vapor resistant materials being the only effective water-vapor resistance in the wall, the one on the plaster in a temperature-structure plot of the wall effecting in the space between the supports a dew-point line below the temperature-line in said space, and the other one effecting in said layer of insulation a dew-point line substantially the same as that on the exterior of the overlapping siding elements.

U.S. 2,541,905—Apparatus for Rimming Paper Cups. Stephen W. Amberg, Barrington, Ill., assignor to Lily-Tulip Cup Corporation, New York, N. Y. Filed February 6, 1947 — Issued February 13, 1951.

A rimming die for forming a rim on the mouth of a conical paper cup comprising, a female die having a conical cavity, a frustro concila recess and a shoulder therebetween for receiving a conical paper cup with the mouth of the cup adjacent the recess, a male die having radially movable slides provided with arcuate tapered guide portions conforming to the contour of the frustro-conical recess, arcuate tapered recessed portions conforming to the contour of the interior of the paper cup and shoulders therebetween and having means for extending the slides outwardly, and means for moving the male die into the female die and moving the slides inwardly for forming a rim on the mouth of a paper cup inserted therebetween by confining the paper cup between the conical cavity of the female die and the recessed portions of the slides and by confining the mouth of the paper cup between the shoulder and recess of the female die and the shoulders and recessed portions of the slides of the male die as the slides are moved inwardly during the approach of the shoulders.

Yours for the Asking—

Dependable information on outstanding sites for the manufacture of pulp and paper.

Along the Seaboard Air Line Railroad there are still a number of locations which possess the primary requisites for pulp and paper manufacturing, including timber supply, good water for processing, ample labor, excellent transportation, and good living conditions.

The Seaboard traverses the six southeastern states of Virginia, North Carolina, South Carolina, Georgia, Alabama, and Florida — an area comprising one of the world's fastest growing timber regions. These six states have a forest area of 109 million acres.

Let us tell you more about the remarkable potential for wood cellulose in this territory.

WRITE: Warren T. White,
Assistant Vice President,
Seaboard Air Line Railroad,
Norfolk 10, Va.

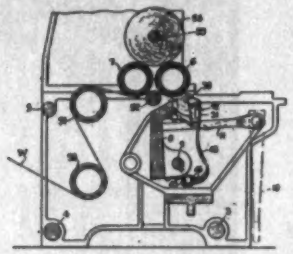
GROW with the GROWING SOUTHEAST!

SEABOARD AIR LINE RAILROAD

VA. N.C. S.C. GA. ALA. FLA.

THROUGH THE HEART OF THE SOUTH

U.S. 2,541,913 — Score-Cut Slitting Mechanism. Thomas N. Carter, Bayside, N. Y., assignor to Cameron Machine Company, Brooklyn, N. Y. Filed April 26, 1950 — Issued February 13, 1951.



In score-cut slitting mechanism the combination of a backing roll, a cutter wheel adjacent the periphery of said roll for slitting a moving web of flexible material engaging said roll, a mount supporting said wheel on an axis generally parellel to the axis of said roll and movable toward said roll, fluid actuating means for moving said mount toward said roll to vary the cutting pressure of said cutter wheel against said backing roll, and means responsive to the rotative speed of said roll for controlling said fluid actuated means in accordance with the rotative speed of said roll to thereby increase the cutting pressure in proportion to the increase in web speed.

U.S. 2,542,043 — Method of Producing a Corrosion Resistant Coating on Steel. Glenn H. McIntyre, Cleveland Heights, Ohio, and Millard G. Ammon, Nashville, Tenn. Filed September 6, 1947—Issued February 20, 1951.

The method of coating a steel article which comprises applying on such article a layer of from about 1/12 to about ½ ounce per square foot dry weight, of a feldspar-silica-borax containing porcelain enamel sheet steel ground coat which when applied at a dry weight of 1¼ to 1½ ounces per square foot would fuse to a glassy surface when fired for about 3 to 5 minutes at a temperature of from about 1560°F. to about 1580°F., firing the coated article at from about 5 to 8 minutes at from about 1500° to about 1700°F. to first form iron oxides on the metal surface and then to absorb such oxides into the enamel coat to produce a substantially completely devitrified coating, said coating being characterized by its extreme thinness, high resistance to corrosion and tenacious adherence to the metal article.

U.S. 2,542,060—Method of Recovering Chemicals from Liquor Produced By Pulping of Cellulosic Materials. Herman N. Simpson, Seattle, Wash. Filed January 2, 1945 — Issued February 20, 1951.

The method of recovering chemicals from black liquor that is produced in the pulping of cellulosic materials by the calcium base sulphite pulp process which comprises creating in a furnace, an upper treating zone of a temperature between 500°C. and 850°C., and a lower zone in direct communication therewith of from 850°C. to 1500°C., discharging the black liquor in an atomized condition along with air to support combustion, downwardly into the upper zone to cause evaporation of the water therein, the ignition of the organic and lignin matter and the reaction of the calcium ligno-sulphonates to produce, along with other products, calcium sulphide and sulphur dioxide, and introducing sulphur dioxide gas into the lower zone in an amount required to complete reaction therein of the calcium sulphide, to calcium oxide and other products.

Can. 471,648 — Container Carriers. Arthur J. Weiss, West Englewood, New Jersey, U.S.A., assignor to Robert Gair Company, Inc., New York, New York, U.S.A. Filed November 1, 1947 — Issued February 20, 1951.

A collapsible carrier for bottles and the like which is formed from a single elongated blank of flexible sheet material having a grain running lengthwise thereof and comprises a bottom section, side sections extending upward therefrom, a centrally located handle section, and a plurality of vertically disposed strips connecting said side sections to said handle section and defining bottle receiving openings between such strips, the ends of said strips being integral with the side and handle sections, and said strips being cut parallel to said grain and formed to utilize substantially all of the sheet material in the blank between said side and handle sections.

Can. 471,679—Wood Pulp Digestion. Ben T. Briggs, Shelton, Washington, U.S.A., assignor to Rayonier Incorporated, Shelton, Washington, U. S. A. Filed April 15, 1947 — Issued February 20, 1951.

In the production of high alpha cellulose from wood chips, the improved method which comprises subjecting wood chips to the action of steam at a temperature from 160°C. to 200°C. for a period of from 20 to 90 minutes, and subsequently digesting the steam-treated chips with an alkaline cooking liquor in which the alkali to wood ratio (weight of sodium hydroxide plus sodium sulfide, if any, expressed as Na_2O per unit weight of bone dry chips) is from 0.16 to 0.24 at a temperature of from 160°C. to 180°C. for from 1 to 4 hours.

In the method of claim 1, substantially removing the air from the wood chips prior to the action of steam, and draining from the wood chips during steaming such condensate as forms.

In the method of claim 1, removing from the wood chips during the steaming such condensate as forms and pumping into the chips while under pressure the alkali cooking liquor.

In the production of high alpha cellulose from wood chips, the improved method which comprises subjecting wood chips to the action of steam at a temperature of from 160°C. to 180°C. for a period of from 20 to 90 minutes under distinctly acid conditions, draining from the wood chips such condensate as forms, digesting the steam-treated chips with an alkaline cooking liquor in which the ratio of the weight of active alkali expressed as Na_2O to the weight of bone dry wood is from 0.16 to 0.24, bringing the liquor up to a digestion temperature of from 160°C. to 180°C., maintaining the digestion at this temperature for from 1 to 4 hours, and then blowing the digester.

Can. 471,695—Cellulose Purification. Mervin E. Martin, Cumberland, Maryland, U.S.A., and Morris Umansky, Summit, New Jersey, U.S.A., assignors to Camille Dreyfus, New York, New York, U.S.A. Filed July 12, 1948 — Issued February 20, 1951.

Process for the treatment of unbleached sulfite wood pulp, which comprises digesting sulfite wood pulp with a dilute aqueous alkaline solution, chlorinating the digested pulp, washing with a dilute aqueous alkaline solution, digesting the washed chlorinated pulp under super-atmospheric pressure in a dilute aqueous alkaline solution, and then subjecting said digested pulp to bleaching with an aqeuous hypochlorite solution.

A process for the treatment of unbleached sulfite wood pulp which comprises digesting the sulfite wood pulp with a 0.5% aqueous sodium hydroxide solution for 15 minutes at a temperature of 135°C., washing the pulp neutral with water, chlorinating the neutral pulp for 30 minutes with an aqueous chlorine solution containing a 1.5% by weight on the pulp of available chlorine, washing the chlorinated pulp with a 0.25% by weight aqueous solution of sodium hydroxide at 50°C., washing the pulp neutral with water, bleaching the neutral pulp for two hours at 35°C. with an aqueous solution of sodium hypochlorite having a pH of 10 to 10.5 and 0.75% on the weight of the pulp of available chlorine present, digesting the bleached pulp under super-atmospheric pressure for 15 minutes at 135°C. in a 0.75% by weight aqueous solution of sodium hydroxide, again bleaching the pulp for two hours at 35°C. with an aqueous solution of sodium hypochlorite having a pH of 8.5 with 0.5% on the weight of the pulp of available chlorine present, washing the bleached pulp neutral with distilled water and then drying the pulp.

Can. 471,772—Porous Web Treating Apparatus. George D. Knight, Wilmington, Delaware, U.S.A., and Ben W. Rowland, Appleton, Wisconsin, U.S.A., assignors to The Institute of Paper Chemistry, Appleton, Wisconsin, U.S.A. Filed May 9, 1948 — Issued February 27, 1951.

Apparatus for treating a porous web, comprising, an independent impervious backing for each of the opposite sides of the web, means for initially successively and independently evacuating fluid ingredients from a region at and within a surface of the web opposite to each of said backings, means for thereafter separately applying fluent treating substance to each evacuated region opposite to said backing under at least atmospheric pressure and before direct exposure of the region to the ambient atmosphere, and means for relatively moving said backings and said evacuation and substance applying means to advance the web and to thereby enlarge the treated areas on the opposite sides of the web.

Apparatus for treating a porous web, comprising, an independent roller providing an impervious backing for each of the opposite sides of the web, means for initially successively and independently evacuating fluid ingredients from a region at and within a surface of the web opposite to each of said rollers, means for thereafter separately applying fluent treating substance to each evacuated region opposite to the adjacent roller under at least atmospheric pressure and before direct exposure of the region to the ambient atmosphere, and means for rotating said rollers to advance the web past said evacuating and substance applying means and to thereby enlarge the treated areas on the opposite sides of the web.

Can. 471,874 — Permanent Papers. Chester G. Landes, New Canaan, Connecticut, U.S.A., John Studeny, Erie, Pennsylvania, U.S.A., and John D. Pollard, Baltimore, Maryland, U.S.A., assignors to American Cyanamid Company, New York, New York, U.S.A. Filed December 10, 1948 — Issued March 6, 1951.

Paper containing about 0.3 percent to 10 percent by weight of a member selected from the group consisting of ammonium and alkali metal salts of dicyanimide.

A composition according to Claim 1 in which the paper is a normally acid paper having a pH of about 4 to 6.

Paper containing about 0.3 percent to 10 percent by weight of sodium dicyanimide.

A method of improving the stability of paper against aging which comprises impregnating said paper with an aqueous solution of a member selected from the group consisting of ammonium and alkali metal salts of dicyanimide and subsequently drying the paper to retain therein about 0.3 percent to 10 percent of said compound.

Walworth

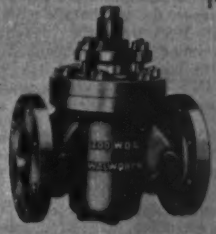
Valves and Fittings

WALWORTH No. 725FS OS&Y, Flanged, Special Alloy Wedge Gate Valves were developed especially for the pulp and paper industry. They are available in sizes from 2 to 12 inches for 200 pounds, and 14 to 24 inches for 150 pounds, non-shock service.

WALWORTH No. 928FS Swing Check Valves are recommended for use with No. 725FS Gate Valves. Like No. 725FS, they are designed to meet fully the requirements of the pulp and paper industry.

WALWORTH No. 716 is an OS&Y, Saddle Style, Wedge Gate Valve having body, bonnet, and wedge of Ni-Resist. The seat rings and stems are of 18-8 stainless steel. These valves are available in sizes ½ to 2", and complement the No. 725FS valves in the smaller sizes.

WALWORTH Pressure-Seal Cast Steel Gate Valves exemplify the greatest improvement in high-pressure, high-temperature valve design. The internal pressure keeps the body-to-bonnet joint tight. Series 600: 1½" and larger; Series 900: 3" and larger; Series 1500: 1" and larger.



WALWORTH No. 1700F Lubricated Plug Valves are available in a variety of materials for corrosive service. They assure long life and positive operation; are wrench or gear operated; have a working pressure of 200 pounds WOG; and are available in sizes from 1" to 8".

...proved performance in pulp and paper mills

For many years the Walworth Company has been producing valves designed for service in the pulp and paper industry. These valves are similar in design to regular, standard iron body gate valves, but, because of the conditions peculiar to the pulp and paper industry, the valves are made of corrosion resistant alloys. Years of satisfactory service have proved these alloy valves to be the most suitable for this special service.

Walworth manufactures valves and pipe fittings of steel, stainless steel, iron, and bronze. Illustrated are Walworth valves of latest design. For further information and details of Walworth's complete line of valves and fittings, see your local Walworth distributor, or write for catalog.

WALWORTH

Pulp and Paper Mill Division
60 East 42nd St., New York 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

Financial News

STOCK REPORT

	Per Share Earnings Calendar Year 1949	Per Share Earnings 12 Mo. to Approx. 12/31/50	Indic Annual Divid. Rate	May 2 Approx. Market Price
PREFERRED STOCKS				
Armstrong Cork Co. $3.75 Cum.	$40.95*	$48.80*	$3.75	$95
Armstrong Cork Co. $4.00 Cum. Conv.	40.95*	48.80*	4.00	118½
Celotex Corp. 5% Cum.	6.80c	14.34b	1.00	17½
Champion Paper & Fibre $4.50 Cum.	60.09f	102.62	4.50	103½
Container Corp. of Amer. 4% Cum.	89.52	151.72	4.00	100½
Crown-Zellerbach $4.20 Cum.	54.38c	67.00h	4.20	102½
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.93	16.31	2.50	63½
Flintkote Co. $4.00 Cum.	62.70	96.36a	4.00	108½
Robert Gair Co., Inc., 6% Cum.	13.79†	24.54†	1.20	19½
International Paper Co. $4.00 Cum.	284.55	289.77	4.00	104½
Kimberly Clark Corp. 4% Cum.	85.27	114.95h	4.50	108½
MacAndrews & Forbes 6% Cum.	61.59	62.50	6.00	134
Mead Corp. 4¼% Cum.	51.37	106.16a	4.25	95½
Mead Corp. 2% Cum. Conv. 2nd	21.35*	45.61*a	2.00	65
Pabco Products, Inc., 4% Cum. Conv.	56.46	120.13	4.00	101
Rayonier, Inc., $3 Cum.	9.54	18.51a	2.00	36½
St. Regis Paper Co. 4.40% 1st A	30.74	82.64a	4.40	94
Scott Paper Co. $3.40 Cum.	51.15*	65.41*	3.40	96½
Scott Paper Co. $4.00 Cum.	51.15*	65.41*	4.00	103
Sutherland Paper 4½% Conv.	46.92	90.10a	4.25	129½
U. S. Gypsum Co. 7% Cum.	283.37	348.48	7.00	178½
United Wallpaper Inc., 4% Cum. Conv.	2.14	17.78a	2.00	26½
West Virginia Pulp & Paper 4½% Cum.	61.28c	99.26h	4.50	109½
COMMON STOCKS				
APW Products Co.	(d)0.81	0.69	—	7½
American Writing Paper Corp.	.04	2.02	0.50	11½
Armstrong Cork Co.	6.57	8.13	3.75	58½
Celotex Corp.	1.45c	3.78h	1.00	17
Certain-Teed Prods. Corp.	2.84	3.92	1.50	16½
Champion Paper & Fibre	5.15f	9.44	3.00	58
Congoleum Nairn Co.	3.04	3.29	2.00	25½
Container Corp. of America	4.23	7.20a	2.50	38½
Crown-Zellerbach	6.02e	7.34h	3.10	54½
Dixie Cup Co.	7.44	12.18	3.00	63½
Eastern Corp.	0.04	4.30	1.00	22½
Flintkote Co.	4.33	6.19a	3.00	30½
Robert Gair Co., Inc.	2.11†	3.92†a	0.70	13½
Great Northern Paper Co.	4.87	4.33	3.00	49½
International Paper Co.	7.12	7.92a	3.00	54½
Johns-Manville Corp.	4.83	7.23	3.50	58½
Kimberly Clark Corp.	5.29	6.28h	2.40	45½
MacAndrews & Forbes Co.	3.64	3.71	3.00	38½
Marathon Corp.	3.29c	5.40h	2.00	47½
Mead Corp.	4.10	6.01a	2.20	26
National Container Corp.	0.95	2.41	0.80	13
Pabco Products, Inc.	0.85	1.87	0.60	19½
Rayonier, Inc.	4.75	10.41a	3.00	50½
Ruberoid Co.	7.93	9.64	3.50	57½
St. Regis Paper Co.	0.91	2.64a	0.60	14½
Scott Paper Co.	3.04	3.90	2.00	48½
Sutherland Paper Co.	4.62	8.48	2.75	52½
Union Bag & Paper Corp.	5.01	8.21a	3.00	45
United Board & Carton	(d)1.61b	2.71g	1.00	19½
U. S. Gypsum Co.	13.51	16.70	10.00	119½
United Wallpaper	(d)0.01	0.48a	—	3½
West Virginia Pulp & Paper	8.18c	13.73h	5.00	84

(a) 12 months to 3/30/51
(b) Year ended 11/13/49
(c) Year ended 1/31/50
(d) Deficit
(e) 12 months to 10/31/50
(f) 9 months to 12/31/49
(g) 12 months to 3/3/51
(h) 12 months to 1/31/51
(*) Earnings per combined preferred shares
(†) Includes domestic and Canadian subsidiaries and 60% equity in Southern Paperboard Corp.

Robert Gair Co., Inc., for the first quarter of 1951 reports combined income of the company and its domestic and Canadian subsidiaries, including its 60 percent equity in the consolidated net income of Southern Paperboard Corp. and subsidiary, was $2,066,135. After payment of $89,644 in dividends for the period on the preferred stock, the balance of $1,976,491 was equal to $1.11 cents per share on the 1,779,888 shares of common stock outstanding March 31, 1951.

Nekoosa-Edwards Paper Co., Port Edwards, Wis., reports a net profit of $567,729 for the first quarter ending March 31 after provision for income taxes. The earnings per share were $1.64.

The 1951 first quarter net profit represents an increase of 60.7 percent over the same quarter last year, when a $353,260 net was reported. Sales for the period were $5,817,659, up 25.6 percent from a first quarter 1950 sales total of $4,630,279.

National Container Corp. reports that the company's sales for the first quarter of 1951 reached approximately $17,500,000, a record volume, comparing with $8,783,000 for the first quarter of 1950.

Net earnings for the three months ended March 31, 1951, Mr. Kipnis estimated, would be about $1 per share on the common stock after all taxes figured at the maximum 62 percent combined rate for normal and excess profits taxes. This would compare with 34 cents per share earned in the same period of 1950.

Abitibi Power and Paper Co. report a 3-for-1 split in the common stock and the creation of an additional 2,278,918 common shares have been approved by stockholders. They have also approved a by-law providing for the cancellation of 241,380 preference shares which have been redeemed. The by-law covering the split in common stock also provides for the maintenance of the proportional, provisional voting powers of the preferred stock still outstanding.

President Douglas Ambridge told the meeting that the company would have to raise $6,500,000 from the public in connection with its acquisition of a half interest in the British Columbia Pulp and Paper Co. and the Koener companies in British Columbia. British Columbia Pulp and Paper Co., which Abitibi Power and Paper Co. now owns, will issue bonds to the amount of $15 million, which amount will pay off $6 million of outstanding securities and will purchase for the British Columbia Pulp and Paper Co. the Koener properties.

In turn, the Koener interests will then purchase from Abitibi Power and Paper Co. 50 percent of the shares of British Columbia Pulp and Paper Co. now held by Abitibi so that the whole British Columbia Pulp and Paper Co.-Koener operations will be owned 50 percent by Abitibi and 50 percent by Koener. The operation will eventually be known as Alaska Pine and Cellulose Ltd.

Doeskin Products, Inc. showed an increase in sales for 1950 of approximately 32 percent, to $11,410,415, from sales of $8,613,843 for the preceding year.

Net profit for 1950 reflected a gain of about 81 percent, at $409,324, as compared with $226,020 for 1949. Actually, however, the percentage gain in profits for 1950 over the preceding year, was much greater inasmuch as earnings for last year included a provision of $475,000 for taxes as against no such provisions for 1949.

Howard Smith Paper Mills, Ltd., has increased its holdings of common shares of Donnacona Paper Co. during 1950 by 40,108 shares to a total of 231,747 shares, owning now 61.4 percent of the latter's outstanding 376,572 common shares. The total cost of the shares purchased in 1950 was $834,378 and average cost was $20.80 a share.

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Most orders accepted, however, at price prevailing on date of shipment. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports

Rolls, contract, per ton $105.00/110.00
Sheets ..... 118.00/ —

F.o.b. Mills, C.l. Frt. allowed, dock, N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls ..... $7.75/ —
No. 1 Wrapping Rolls 8.25/ 8.50
Standard Bag ..... 7.50/ —

Tissues— per ream 24x36 (480) 10 lbs. 3500 lbs or more

Wh. No. 1 Frd. ..... $1.95 /$2.25
Wh. No. 1 MG ..... 1.95 / 2.25
Wh. No. 1½ ..... 1.85 / 2.15
Wh. No. 2 ..... 1.85 / 2.15
Kraft Non-Tar ..... 1.85 / 2.15
White Non-Tar ..... 1.95 / —

Toilet— per case of 100 rolls—1 M sheets

Unbleached 4½x4½ ..... $8.00/$8.25
Unbleached 4½x5 ..... 6.60/ —
Bleached 4½x4½ 10.00/12.50
Bleached 4½x5 ..... 9.85/ —

Per Case of 50 rolls—2000 sheets

Unbleached 4½x4½ ..... $8.00/$9.75
Bleached 4½x4½ ..... 6.95/ —

Per Case of 100 rolls—1000 sheets

Postal, 4½x3, 2-ply $8.95/10.65

Paper Towels—per case of 3750

Wh. Jr. M'ff'd 9¼x9½ $5.75
Br. Jr. M'ff'd 9¼x12 ..... 4.10
Br. Jr. M'ff'd 9½x9½ 3.60
Br. Jr. Spl. fold 9½x10¼ 3.65
Bichd. 7½x11, 24/25 rolls $7.00/7.55

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets* .. $19.55/21.55
Reg. Jute M.F. 40-lb., sheets* .. 18.00/20.00
Wrapping Manila 8.75/10.50
Printing Manila 10.50/12.00
* Less usual allowance for rolls.

WORLD WOOD PULP MARKETS

Second Quarter Contract Prices, Per Short Air-Dry Ton

	Varying freight allowances		Atlantic Ports		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	‡$85.00/ 90.00	‡$95.00/100.00			
Sulphate, Bleached	135.00/175.00	190.00/200.00	*$255.00/315.00		*225.00/ —
Sulphate, Unbl. Northn.		145.00/175.00	*225.00/295.00	$200.00/ —	
Sulphate, Unbl. Southn.					
Sulphite, Bichd. (Sftwd.)	135.00/145.00	160.00/175.00	*250.00/290.00	*225.00/ —	*225.00/ —
Sulfite, Bichd. (Hdwd.)	135.00/ —				
Sulphite, Unbichd.		150.00/160.00	*225.00/265.00	*200.00/ —	
Sulphite, Unbl'd (Glassine)		164.00/ —	*227.00/ —		
Soda, Bichd.	140.00/142.50	155.00/160.00			
Siderunx, Pulping News	106.00/ —	106.00/ —			

* On dock. † Delivered. ‡ F.o.b. Shipping Point.

Gummed Tape—per bdl., 500 bdls. or more

90-lb. 375 ft. GSI ..... $7.20 / —
60-lb. 600 ft. GSI ..... 7.20 / —
35-lb. 800 ft. GSI ..... 8.28 / —
35-lb. 500 ft. GSO ..... 6.21 / —

Boards, per ton—

Filled News ..... $107.50/ —
Plain Chip 105.00/107.50
Bichd. Mis. L.d. Chip ..... 147.50/ —
White Pat. coated .020 ..... 170.00/ —
Kraft Liners 42 lb. 115.00/117.50
Kraft Corr. .009 ..... ‡122.50/126.00
Binders Boards ..... ‡137.50/140.00

The following prices are representative distributors' resale prices.

Rag Content Bonds and Ledgers—
White, 20 lb.

	Bonds	4 Cms.
		per cwt.
100% Rag Ex. No. 1	‡	$70.45/$75.90
100% Rag	‡	62.65/ —
75% Rag		48.15/ —
50% Rag		38.90/ —
25% Rag		31.65/ 33.00

	Ledgers	4 Cms.
		per cwt.
100% Rag Ex. No. 1	‡	$73.65/$73.80
100% Rag		63.90/ —
75% Rag		49.40/ —
50% Rag		40.20/ —
25% Rag	‡	33.00/ 34.30

Sulphite Bonds and Ledgers
White, 20 lb.

	Bonds	4 Cms.
		per cwt.
Watermarked		$19.00/$20.50
Plain		18.05/ 19.50

	Ledgers	4 Cms.
		per cwt.
Watermarked		$20.30/$21.80
Plain		19.35/ 20.90

White Bank

	Conversion Coated	Case
		per cwt.
No. 1		$23.40/$24.65
No. 2		21.90/ 23.40
No. 3		20.40/ 22.40
	Machine Coated	
No. 1		$18.15/$18.40
No. 2		16.15/ 16.65
	Uncoated	
No. 1 Antique (Watermarked)		$18.65/$19.15
Offset		17.40/ 19.90
A Grade E. F.		17.40/ 18.15
A Grade S. C.		18.15/ 18.65
B Grade E. F.		17.65/ —
B Grade S. C.		16.90/ 18.40

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) PENDING OPS ROLLBACK, THESE PRICES REPRESENT CEILING RANGE.

	New York	Philadelphia	Boston	Chicago
	April 30	April 11	April 28	May 1
No. 1 Mixed Paper	$20.00/ 21.00	$23.00/ 26.00	$23.00/ 26.00	$20.00/ —
Boxboard Cuts	25.00/ 28.00	21.00/ 23.00	26.00/ —	25.00/ —
Mill Wrappers	25.00/ 30.00	30.00/ 25.00	30.00/ 36.00	22.00/ —
No. 1 News	23.00/ 24.00	24.00/ 28.00	26.00/ 29.00	20.00/ —
Over-issue News	40.00/ 45.00	31.00/ —	30.00/ 45.00	25.00/ —
Corrugated Containers	44.00/ 46.00	49.00/ 53.00	— / 45.00	52.00/ —
New Corrugated Cuts	74.00/ 80.00	50.00/ 51.00	55.00/ 65.00	62.00/ —
Double Kraft Ld. Corr. Cuts	115.00/120.00	105.00/120.00	130.00/140.00	120.00/ —
100% Kraft Corr. Cuts	140.00/165.00	125.00/135.00	130.00/170.00	140.00/ —
Used Kraft Bags	85.00/ 95.00	80.00/ 85.00	85.00/116.50	65.00/ —
No. 1 Brown Kraft Paper	90.00/ 95.00	90.00/ 95.00	90.00/110.00	65.00/ —
Super Assorted Br. Kraft	100.00/105.00	100.00/105.00	100.00/125.00	90.00/ —
New Br. Kraft Env. Cuts	160.00/190.00	160.00/175.00	160.00/180.00	150.00/ —
New Br. Kraft Cuts	150.00/170.00	130.00/140.00	150.00/180.00	140.00/ —
No. 1 Gdwd Shvs.	80.00/ 85.00	65.00/ 75.00	80.00/ 85.00	55.00/ —
White Newsblanks	105.00/110.00	100.00/110.00	105.00/120.00	80.00/ —
No. 1 Flyleaf Shvs.	80.00/ 85.00	80.00/85.00	95.00/110.00	100.00/ —
No. 1 Soft Wht. Shvs.	180.00/190.00	170.00/175.00	175.00/195.00	175.00/ —
Super Soft Wht. Shvs.	190.00/200.00	190.00/200.00	190.00/210.00	185.00/ —
Hd. Wht. Shvs.	185.00/210.00	190.00/215.00	190.00/215.00	180.00/ —
Hd. Wht. Env. Cuts	200.00/245.00	225.00/ —	200.00/235.00	190.00/ —
New Manila Env. Cuts	140.00/150.00	160.00/165.00	140.00/165.00	115.00/ —
Col. Tab Cards	110.00/120.00	115.00/120.00	95.00/150.00	100.00/ —
Manila Tab Cards	170.00/185.00	165.00/190.00	160.00/200.00	165.00/ —
No. 1 Mixed Ledger	100.00/105.00	100.00/105.00	90.00/110.00	100.00/ —
White Ledger	130.00/140.00	125.00/130.00	125.00/140.00	125.00/ —
No. 1 Book & Mag.†	55.00/ 60.00	40.00/ 45.00	40.00/ 60.00	25.00/ —
No. 1 Rep'd. Hvy. Books‡	65.00/ 70.00	50.00/ 60.00	60.00/ 75.00	55.00/ —

* Delivered. † Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood.

RAG MARKET

New Domestic Cotton Cuttings
(Prices to Dealers, F.o.b. Ship. Pt.)

ALL PRICES NOMINAL

No. 1 White Shirts ..... $23.00/$24.00
No. 1 Unbichd. Muslins 23.00/ 24.00
Bichd. Canton Flannels 17.00/ 18.00
No. 1 Lt. Silesias 12.00/ 13.00
No. 1 Lt. Prints 9.00/ 12.00
Wht. Bk. Blue Overalls (Bichable) 15.50/ 16.00
No. 1 Blue Overalls 7.00/ 8.00
Fancy Shirts 6.00/ 6.50
No. 1 Washables 5.50/ 6.00
Suntan Khaki Cuts 11.00/ 12.00
Mixed Khaki Cuts 9.00/ 11.00
Corduroy Cuts 4.75/ 5.25
Cottonades 7.00/ 7.50
Bichd. Underwear Cuts ..... nominal
Unbichd. Underwear Cuts ..... nominal

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

ALL PRICES NOMINAL

	Per 100 lbs.
Mixed White	$5.00/$5.50
Cotton Pants & Overalls	4.75/ 5.00
Thirds and Blues, Repacked	3.75/ 4.00
No. 1 Roofing Rags	3.00/ 3.10
No. 2 Roofing Rags	2.40/ 2.50
No. 3 & 4 Roofing Rags	2.20/ 2.30
Roofing Bagging	2.20/ 2.30

New Foreign Cotton Cuttings
(Prices to Mills, F.o.b. Dock, N.Y.)

	Per 100 lbs.
New Dark Cuttings	$4.75/$5.00
New Mixed Cuttings	4.75/ 5.25
Light Silesias	8.00/ 8.50
Light Flannelettes	7.50/ 8.00
New White Cuttings	nominal
New Unbleached Cuttings	nominal
Fancy Shirt Cuttings	6.50/ 7.50

Light Prints	6.50/ 7.50
Blankable Khaki, No. 1	6.00/ 6.50
Unbl. Khaki, No. 1	5.00/ 5.50

Old Foreign Rags
(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	nominal
No. 2 White Cottons	nominal
No. 3 White Cottons	nominal
No. 4 White Cottons	nominal
Extra Light Prints	5.50/ 6.00
Old Light Prints	4.50/ 5.00
Med. Light Prints	3.75/ 4.00
Dutch Blue Cottons	4.00/ 4.50
Linsey Garments	2.75/ 3.00
Dark Cottons, Egyptian	2.50/ 2.75
Dark Cottons, European	2.75/ 3.00
Old Shoppering	2.40/ 2.50
New Shoppering	2.50/ 2.75

Bagging
(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$8.25/$8.50
Domestic Gunny, No. 1	7.75/ 8.00
Heavy Wool Tares	8.00/ 8.25
Foreign Manila Rope	8.00/ 8.25
Domestic Manila Rope	7.50/ 8.50
Jute Strings	7.75/ 8.00
No. 1 Sisal Strings	8.00/ 8.25
Mixed Strings	nominal
Paper Mill Tares	5.25/ 5.75
No. 1 Scrap Burlap	
Foreign	6.50/ 6.75
Domestic	7.00/ 7.50
Austr. Wool Pouches	7.50/ 8.50
New Burlap Cuttings	7.50/ 8.00

MATERIALS

Aluminum, sulfate:
comi. bags, wks. ..... cwt. 1.65
iron-free c.l. 3.25

Alcohol, ethyl:
tax free, dms. c.l. ..... gal. 1.01 / 1.05½
dnld. East Miss.

Alcohol, methyl:
Synthetic, Zone 1, dms.

c.l. fc. alld. ..... gal. .44

Casein, acid-prec.:
dom. sh. pt. c.l. ..... lb. .40 / .41
imp. ex. dock ..... lb. .40½/ .41

Caustic soda:
c.l. wks. solid, 76%, cwt. 3.35
flak. & grd. 100-lb. drums ... 3.75
liquid 50% tanks 2.55
liquid 70% tanks 2.65

China clay:
dom. air-float. filler, c.l. wks.
ton 10.00
water-washed, lump, filler 11.00
coating ..... 17.60 /20.50
imported, ex whse. ... short ton 15.20 /28.35

Chlorine:
single-unit tanks, works .. cwt. 2.70
multi-unit ..... cwt. 3.30 / 4.40

Formaldehyde:
USP, inh. dms, c.l. wks. ... lb. .0625/ .0675
l.c.l., E. wks. ..... .0675/ .0725

Fuel oil:
Bunker C, No. 6 Cal. hvy
tanks, refinery ..... bbl. 1.95 / 2.15
light ..... bbl. 2.05 / 2.10

Hydrogen peroxide:
USP, 35% cbys. E. of Miss.
lb. .23½/ .26½

Lime:
hydrated, bags, wks. Buffalo
ton 13.50

Rosin:
B gum, drms, c.l. Savan. . cwt. 8.00
G, H, I, K ..... cwt. 8.79 / —
FF, wood, dn. ..... cwt. 7.30 / —

Rosin size:
70%, gum & pale grds, tank
cars, south, sh. pt. .... cwt. 6.80 / 7.00

Salt cake:
dom. bulk, c.l. wks. ..... ton 17.00
wks. frt. all. ..... ton 20.00 /22.00

Soda ash:
light, 58%, bags, wks. ... 1.50
bulk ..... cwt. 1.20 . .

Sodium silicate 40°:
turbid. c.l. wks. ..... cwt. 1.30 /
l.c.l. wks. ..... 1.60 / 1.85

Sodium peroxide:
dms. c.l. E. of Miss. ..... lb. .21
l.c.l. dn. ..... lb. .21½/ .22

Soybean, protein:
chem. isol, wks. c.l. ..... lb. .24 / —
Cinn. and Chic.

Sulfuric acid:
60° Be. cbys. cl. wks. ... cwt. 1.75 / —
l.c.l. wks. ..... cwt. 2.05 / 2.85

Sulfur:
crude, c.l. mines, contract,
long ton 21.00 /22.00
f.o.b vessels Gulf ..... 22.50 /23.50
Export, f.o.b. Gulf 25.00

Sulfur dioxide:
liquid, comi. cyl. wks. ..... lb. .09
multi-unit cars ..... lb. .0535

Starches:
pearl corn, bags, c.l. wks. .. cwt. 6.02 / —
white dextrines, c.l. wks. .. cwt. 7.41 / —
potato, Idaho, c.l. wks. ... cwt. 5.50 / —
potato, Maine, c.l. wks. ... cwt. 5.25 / —
tapioca, conv. dextrines ... cwt. 8.25 / 8.75
medium grds. Gulf and East
Coast ports ..... 6.75 / 7.50
low, Sizes, on dock N. Y. ..... 5.75 / 6.00
nominal

Talc:
domestic, 50-lb sacks, c.l.
wks. ..... ton 25.00 /30.00

Titanium dioxide:
anastase, c.l. dnld., bags ... lb. .21 / .21½
l.c.l. dnld. ..... lb. .22 / .23½
rutile, c.l. dnld. ..... lb. .23 / .23½
l.c.l. dnld. ..... lb. .24 / .24½

N.B.: For special market conditions, see *Trends*.

It is dramatic evidence of the immediate trade-wide acceptance of the PULP-MASTER — and of the need it fills — that today, only 3 years after it was put on the market, some 90 units have already been sold . . . in the U.S., Canada and abroad.

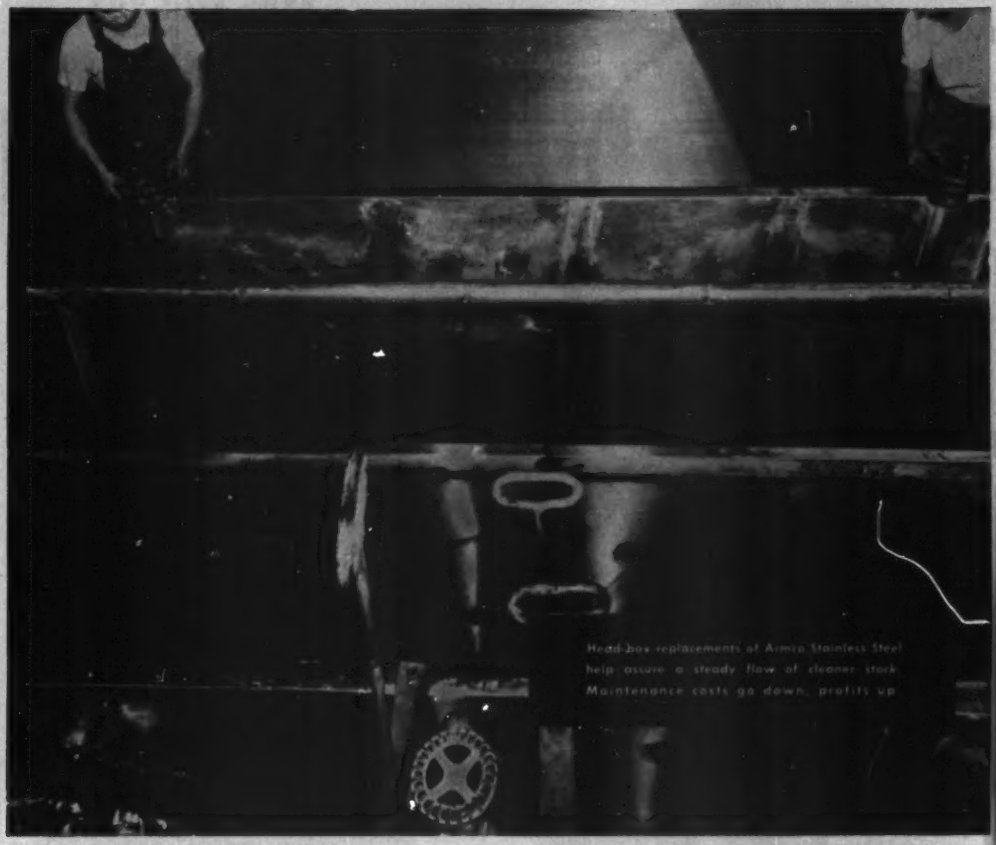
High consistency operation, reduced beating cycles, efficient use of power and low maintenance have been demonstrated in a wide variety of applications.

For complete details, ask your Jones representative, orwrite for Bulletin EDJ-1019B.

PULP-MASTER

E. D. JONES & SONS COMPANY, PITTSFIELD, MASS.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY


Head-box replacements of Armco Stainless Steel help assure a steady flow of cleaner stock. Maintenance costs go down, profits up.

This replacement gets costs down on paper

Finding it necessary to replace parts of major mill equipment? If so, why not make economy comparisons with the various metals before specifying?

You'll find Armco Stainless Steels rank high here. Their high corrosion resistance helps cut down cleaning and maintenance costs. Paper stays cleaner, stock rejects are decreased. Then too, Armco Stainless assures longer equipment life—an important advantage in these days of material scarcity.

When thinking about mill replacement parts keep your equipment manufacturer in mind. He will be glad to work with you on your repair or installation projects, even though he may not be able to get all the stainless he wants when he wants it.

If your mill maintenance men work with sheet metal they will be able to handle stainless jobs. Armco's booklet, "Stainless Fabricating Tips," will give them the stainless data they need. Write for a free copy.

ARMCO STEEL CORPORATION

3341 CURTIS STREET, MIDDLETOWN, OHIO • PLANTS AND SALES OFFICES FROM COAST TO COAST • EXPORT: THE ARMCO INTERNATIONAL CORPORATION

ARMCO

MORE SCRAP MEANS MORE STEEL . . . TURN YOURS IN TODAY

IMPORTS

IMPORTS AT NEW YORK

Week Ending April 28

Newsprint

Bowater Paper Co., Cornerbrook, Cornerbrook, 2810 rolls.

Baryta Coated Paper

C. Happel, Havmann, Hamburg, 112 cs.
Lep Transport, Inc., American Merchant, London, 59 rolls.

CHAS. T. MAIN, INC.
CONSULTING ENGINEERS
Process Studies, Design, Specifications and Engineering Supervision
PULP AND PAPER MILLS
Steam, Hydraulic and Electrical Engineering
Reports, Consultation and Valuations
80 Federal Street Boston 10, Mass.

FOR OVER 10 YEARS
we have been converting for others. We can put your facial tissue into boxed goods, toilet rolls or dinner napkins at a very reasonable price.
TISSUE CONVERTING COMPANY
559—1 South Avenue
Garwood, New Jersey

STOP PROFIT LEAKS
Modern Recovery Methods, designed and engineered by Ferguson, will stop profit leaks by turning WASTE into ASSETS.
Preliminary Discussions In Confidence and Without Obligation
THE H. K. FERGUSON COMPANY
ENGINEERS AND BUILDERS
Headquarters: Ferguson Building, Cleveland, O.
District Offices: New York, Houston, Chicago, Los Angeles, Cincinnati

THE RUST ENGINEERING COMPANY
Engineers and Constructors
Pittsburgh, Pennsylvania
Complete Service for
PULP AND PAPER MILLS—PLANTS AND FACILITIES
DESIGN, CONSTRUCTION, MODERNIZATION

MISCO
STAINLESS STEEL CASTINGS
FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
DETROIT 7, MICHIGAN

Writing Paper

R. Sunne, Havmann, Hamburg, 70 cs.

Embossing Paper

Peerless Roll Leaf Co., American Merchant, London, 11 cs.

Wallpaper

C. A. Haynes & Co., American Merchant, London, 38 pkgs.
C. R. Gracie & Son, Olga Maersk, Shimidzu, 18 bls. (grass cloth).

Tenguic Paper

Elliott Addressing Machine Co., Olga Maersk, Kobe, 15 cs.

Paper Cans

Dreuding Bros., Excalibur, Genoa, 7 cs.

Crepe Paper

Brundage Merchandise Co., American Defender, Rotterdam, 47 cs.

Drawing Paper

H. Reeve Angel & Co., Inc., Vardulia, London, 6 cs.

Filter Paper

H. Reeve Angel & Co., Inc., Vardulia, London, 25 cs.

Paper Napkins

A. Doniger, American Planter, Hamburg, 3 cs.

Parchment Paper

Dingelstedt & Co., American Planter, Hamburg, 14 cs.

Photo Copying Paper

Aeon Co., Westerdam, Rotterdam, 279 ctns.

Sulphite Paper

B. M. Heede, Stavangerfjord, Oslo, 7 bls.

Waxed Paper

Meadows Wye & Co., American Merchant, London, 22 cs.

Miscellaneous Paper

Yardley & Co., American Merchant, London, 17 cs.

Rags, Bagsings, etc.

E. J. Keller Co., Inc., Havmann, Rotterdam, 64 bls. bagging.
(———), Havmann, Rotterdam, 50 bls. old jute bags.
Southern Waste Co., Exchequer, Cochin, 100 bls. jute rags.
Irving Trust Co., Cora Maersk, Genoa, 126 bls. old bagging.
New England Waste Co., Tancred, Yokohama, 100 bls. cotton rags.
Acadia Co., American Merchant, London, 25 bls. rags, 1 ble. woolen rags.
Mundane Co., American Merchant, London, 44 bls. rags.
J. A. Manning Paper Co., Vardulia, London, 27 bls. newcuttings.
(———), Vardulia, London, 52 bls. waste.
Southworth & Co., Vardulia, London, 17 bls. newcuttings.
Midwest Waste Materials Co., Cote du Nord, Marseilles, 78 bls. rags.
Penson Co., Cote du Nord, Marseilles, 37 bls. paperstock.
E. J. Keller Co., Inc., St. Malo, Dunkirk, 71 bls. old bagging.
O'Brien Products, Inc., Westerdam, Rotterdam, 296 bls. old paperstock.
(———), City of Sydney, Calcutta, 250 bls. old jute rags.
(———), Markhor, Calcutta, 124 bls. scrap bagging.

Old Rope

(———), Exchequer, Calcutta, 87 bls. old hemp rope cuttings, 87 bls. hemp rope cuttings.

Casein

American British Chemical Supplies, Havmann, Rotterdam, 2550 bags.
National City Bank, St. Malo, Bordeaux, 400 bags.
(———), St. Malo, Bordeaux, 269 bags.
P. A. Dunkel, Westerdam, Rotterdam, 400 bags.

Woodpulp

The Borregaard Co., Inc., Vasaholm, Gothenburg, 781 bls. woodpulp.
Elof Hansson, Inc., Vasaholm, Gothenburg, 4000 bls. woodpulp.
Cellulose Sales Co., Vasaholm, Gothenburg, 1350 bls. dry sulphate pulp, 2490 bls. sulphite pulp, 1950 bls. sulphate pulp.

U. S. IMPORTS
WOODPULP

Preliminary, March, 1951

Item	Country of Origin	Short Tons
Mechanical		
Unbichd.	Canada	24,923
	Sweden	560
	Norway	2,639
	Finland	1,481
		29,603
Screenings	Canada	435
Bichd.	Canada	1,686
	Finland*	409
		2,095
Chemical		
Sulfite, Unbichd.	Canada	38,243
	Sweden	2,823
	Norway	443
	Germany	435
	Austria	203
	Finland	4,760
		46,907
Screenings	Canada	639
Sulfite, Bichd.		
Rayon & Special Chem. Grades	Canada	19,789
	Sweden	129
	Norway	28
		19,946
Other	Canada	22,639
	Sweden	2,017
	Norway	3,350
	Finland	4,176
		32,182
Sulfate, Unbichd.	Canada	15,994
	Sweden	6,187
	Norway	22
	Finland	4,931
		27,134
Sulfate, Bichd.	Canada	33,747
	Sweden	2,368
	Norway	280
		36,395
Soda, Unbichd. & Bichd.	Canada	3,025
Totals, March	Canada	161,140
	Sweden	14,084
	Norway	6,762
	Finland	15,757
	Germany	435
	Austria	203
		198,381

* To be investigated by Census.

IMPORTS AT ALBANY

Week Ending April 28

Pagel Horton & Co., Inc., Kristina Thorden, Karakar, 3556 bls. woodpulp.

IMPORTS AT NEWARK

Week Ending April 28

Pagel Horton & Co., Inc., Kristina Thorden, Karakar, 4852 bls. woodpulp.

IMPORTS AT NORFOLK

Week Ending April 28

E. J. Keller Co., Inc., Havmann, Antwerp, 75 bls. waste bagging.

for low cost, experimental

PULPING and FIBER

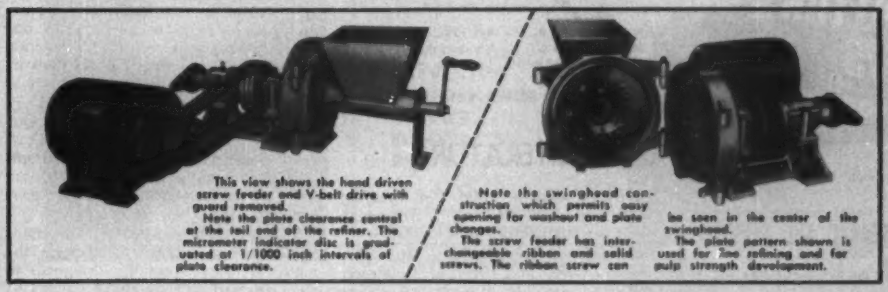
studies

Now... you can get "controlled tests" in pulping raw, steamed, or semi-chemically cooked chips, fully cooked pulp, waste papers, straw pulp, Asplund fiber...

You can improve on your present pulping and fiber studies... and explore new possibilities... with the Sprout-Waldron "Lab" Refiner.

Designed for semi-plant-scale defiberizing, pulverizing, decorticating, blending, granulating and other specialized uses—on dry or fluid feed, hot or cold, high consistency or low—the Sprout-Waldron "Lab" Refiner combines simplicity of design and efficiency, with low initial and operating cost. Plate styles for a wide range of applications are available.

SPROUT-WALDRON 12" LABORATORY REFINER



This view shows the hand driven screw feeder and V-belt drive with guard removed.
Note the plate clearance control at the tail end of the refiner. The micrometer indicator disc is graduated at 1/1000 inch intervals of plate clearance.

Note the swinghead construction which permits easy opening for washout and plate changes.
The screw feeder has interchangeable ribbon and solid screws. The ribbon screw can be seen in the center of the swinghead.
The plate pattern shown is used for fine refining and for pulp strength development.

Available with stainless steel construction

In daily use in many laboratories, both private and governmental, domestic and foreign.

Today... send for Bulletin 17 which describes this useful basic tool for laboratory and pilot-plant use. Complete specifications are included. Write to Sprout, Waldron & Co., Inc., 59 Waldron St., Muncy, Pa.

SPROUT WALDRON SINCE 1866

Sprout-Waldron
Manufacturing Engineers
MUNCY • PENNSYLVANIA

100

COTTON PULP
Limited Tonnage Available
Linters Custom Bleached
We invite your inquiry
ALPHA CELLULOSE CORPORATION
Chicago 11, Ill.
Bloomington, Ill.

MILL COGS
We make a specialty of "Ready Dressed" cogs which are READY TO RUN the moment driven and keyed. Write for circular "G" and instruction sheets free.
The N. P. BOWSHER Co., South Bend, Ind.

Jordan Shell and Plug Fillings
TRADE-MARK
POSITIVE
Reg. U. S. Pat. Off.
High Speed Disc Refiner
THE BAHR BROTHERS MFG. CO.
MARION, INDIANA, U.S.A.

APPLETON
WOOLEN MILLS APPLETON, WIS.

FIBER RESEARCH AND SERVICE
Semi-Chem. and Chemical Pulp
Processes
Pilot Plant Facilities
THE KINSLEY CHEMICAL COMPANY
Cleveland 11, Ohio

WEIGHING while conveying with the WEIGHTOMETER
Wood Chips, Salt Cake, Sulphur, Coal, Etc.
MERRICK SCALE MFG. CO.
PASSAIC, NEW JERSEY

D. Benedetto, Havmann, Antwerp, 77 bls. rags & baggings.
Castle & Overton, Inc., Havmann, Rotterdam, 53 bls. waste bagging.
(———), Havmann, Rotterdam, 73 bls. old bagging.
Bunal & Black, Exchequer, Calcutta, 59 bls. old jute rags.
(———), Exchequer, Calcutta, 50 bls. old jute rags.
(———), American Merchant, London, 122 bls. old jute bagging.

IMPORTS AT BALTIMORE
Week Ending April 28

S. Shapiro & Sons, Havmann, Rotterdam, 28 bls. cotton rags.
(———), Havmann, Rotterdam, 46 bls. old cotton.
Pagel Horton & Co., Inc., Kristina Thorden, Karskar, 1905 bls. woodpulp.

IMPORTS AT PHILADELPHIA
Week Ending April 28

Castle & Overton, Inc., Havmann, Antwerp, 50 bls. jute threadwaste.
New England Waste Co., Exchequer, Cochin, 121 bls. old jute rags.
Castle & Overton, Inc., Vasaholm, Gothenburg, 457 bls. dry sulphate pulp.
Elof Hansson, Inc., Vasaholm, Gothenburg, 1000 bls. woodpulp.
Pagel Horton & Co., Inc., Kristina Thorden, Karskar, 2159 bls. woodpulp.
Philadelphia National Bank, American Defender, Antwerp, 101 bls. jute waste.
Downing & Co., St. Malo, Havre, 47 cs. wallpaper.
Enterprise Paper Co., Averdyk, Antwerp, 32 cs. wrapping paper.
Glant & Co., Markhor, Calcutta, 50 bls. cuttings.

IMPORTS AT BOSTON
Week Ending April 28

Harris Goldman & Co., Averdyk, Rotterdam, 87 bls. old bagging.
Swift & Sons, Averdyk, Antwerp, 49 cs. wrapping paper.
(———), Black Condor, Rotterdam, 575 bls. woodpulp.

NEW LITERATURE

Allis-Chalmers Mfg. Co. Booklet, "1950 Annual Review." Reference guide to engineering developments.

Blaw-Knox Co. Bulletin No. 2373, "Maintenance and Care of Clamshell Buckets." Includes tips on prolonging bucket cable life and diagrammed instructions for the replacement of component parts.

Carnegie Press. Book, "Paper Cutting: Machines and Techniques," by George J. Mills, 26 pp., price $1.25. An elementary, illustrated manual on basic principles, cutters, paper storage and transport, methods of trimming, etc. Book, "Printing Types and How to Use Them," by Stanley C. Hlasta, 320 pp., price $7.50. Describes in full the 126 faces used most often in books, magazines, and advertising. Book, "Sources of Information in the American Graphic Arts," by George J. Mills. 70 pp., price $2.

International Nickel Co., Inc. List "A" offers publicity on the uses and properties of Inco products in industrial fields, production and fabrication. List "B" covers Monel, nickel, inconel, etc. Bulletin, "Inco Nickel Alloys." Lists in chart form the individualized characteristics and applications of the nickel alloys. Booklet, "More Power to You . . . " by W. Melvin Crook. A racing driver gives yachtsmen some tips on metals. Booklet, "When Metals Go to Sea," by H. A. Calahan.

Metron Instrument Co. Technical Data Sheet No. 7 pages 1 and 2, "Series 7 Zero Backlash Miniature Speed Changers."

Minneapolis-Honeywell Regulator Co., Brown Instruments Div. Instrumentation Data Sheet No. 10. 4-la, "Gagetron Solves Many Difficult Liquid Level Problems." Describes measuring element applicable for the measurement of all liquid levels and fluid densities through container walls.

Photoswitch, Inc. Bulletin PI 511, "Photoelectric Intrusion Alarm." Highlights new intrusion and burglary protector which provides a protecting wall of invisible light across any space up to 50 feet.

The Sandy Hill Iron & Brass Works. Bulletin, "Ductile Iron—A New Engineering Material." Technical data on a cast iron that bends. Bulletin, "The Sandy Hill Peppy Peeler." Illustrated technical copy on a portable debarker developed for woods operations.

Specialties, Inc. Brochure (S146). Illustrates and describes operation of a hand-held electrostatic voltmeter used to detect the location of statically charged areas.

Stephens-Adamson Mfg. Co. Magazine, "The S-A Conveyor." Reports on glass batch plant operated by one man; a soybean solvent extraction plant; a coal handling system used by the Corn Products Refining Co., etc.

Superintendent of Documents, U. S. Gov't Printing Office. Booklet, "Our Foreign Policy," 100 pp., price $.25. A brief purports to set down as simple and clearly as possible what we are after in our relations with other governments and their people.

Towmotor Corp. Folder, "Towmotor Special Engineering." Illustrates the many devices specially designed to meet specialized handling problems of specific industries.

U. S. Dept. of Commerce. 13th volume, "Bibliography of Technical Reports (January-June, 1950)," price $1, indexed according to subject. Quarterly report, "Containers and Packaging —Industry Report." Covers fourth quarter of 1950.

U. S. Stoneware Co. Bulletin 239, "Neolac 600—with C-34." Introduces new enamel finish paint that contains no lead but is made with a new resin C-34. Includes instructions for application.

Westinghouse Electric Corp. Catalogue B-4761, "A reference guide to 72 borrowable sound films that cover general interest subject, product information, and training and instruction courses.

ASSOCIATIONS

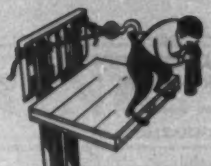
HONOR ILLICK AND BROWN

About 85 alumni of the New York State College of Forestry, Syracuse, N. Y., together with a few guests, met for dinner at Fraunces Tavern, New York City, on April 20 to honor Dean J. S. Illick and Prof. Nelson C. Brown, who are retiring. John Head was master of ceremonies. Talks were given by Chancellor William P. Tolley of Syracuse University; Dean Illick; Prof. Brown; Henry Clepper, Secretary of Society of Foresters; Ernie Broderick and Julius Kahn. Other guests included Henry J. Perry, editor of *Paper Trade Journal*, and James Craig, manager of New York Division of American Forest Products Industries.

J. S. Illick

Nelson C. Brown

W. P. Tolley (left) and E. Broderick



Everywhere you look—

TOWMOTOR REPLACEMENT PARTS ARE QUICKLY AVAILABLE

To make available man-power more productive Towmotor Fork Lift Trucks provide continuous service on all handling jobs. However, even normal mechanical operations require occasional replacement parts to maintain top operating efficiency. To take care of your Towmotor requirements, your Towmotor Representative carries a full line of GENUINE Towmotor-Specified Replacement Parts. TOWMOTOR CORPORATION, Div. 17, 1226 E. 152nd St., Cleveland 10, Ohio.

Genuine Towmotor-Specified Parts are easy to identify, easy to handle and are delivered to you in perfect condition in this specially designed package.

TOWMOTOR PREVENTIVE MAINTENANCE SERVICE ELIMINATES DOWN TIME!

Available through Towmotor Representatives, *Towmotor Preventive Maintenance Service* helps keep your Towmotor equipment up to maximum operating efficiency, assuring extra years of trouble-free service. Towmotor Preventive Maintenance Inspections by factory-trained mechanics can be scheduled for periods when your Towmotors are not in service.

Write for full details!

TOWMOTOR
THE ONE-MAN-GANG

FORK LIFT TRUCKS and TRACTORS

RECEIVING • STORAGE • PROCESSING • DISTRIBUTION

12 Models—A Towmotor for every job

HOW MANY PEOPLE HAVE YOU TALKED TO ABOUT 'AMERICANISM TODAY?

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Mar. 24	Mar. 31	Apr. 7	Apr. 14	Apr. 21
1951	102.6	101.3	102.7	103.1r	103.2
	Mar. 25	**Apr. 1**	**Apr. 8**	**Apr. 15**	**Apr. 22**
1950	97.6	97.0	94.6	94.4	96.9

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	92.6	93.6	96.7	95.4	96.4	97.7	85.3	99.6	96.1	101.0	100.3‡	93.7‡	95.8‡
1951	99.3‡	101.5‡	102.3‡										

‡ Preliminary.
r Revised.

COMPARATIVE YEARLY SUMMARIES

	1944	1945	1946	1947	1948	1949	1950	1951
Year to Date	88.2	88.3	99.7	104.9	100.7	91.0	95.2	101.5
Year Average	88.1	89.4	100.1	104.3	96.2	88.6	95.8‡	

PAPERBOARD OPERATING RATIOS†

	Mar. 24	Mar. 31	Apr. 7	Apr. 14	Apr. 21
1951	105	98	106	102	107
	Mar. 25	**Apr. 1**	**Apr. 8**	**Apr. 15**	**Apr. 22**
1950	95	92	93	88	93

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	88	92	91	92	91	94	82	100	96	102	101	95	94
1951	102	105	104										

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

NOTE: The chart shows the ratio through December 1950 on the basis of 6-day capacity. Beginning with January 1951 the ratio is shown on the new basis of normal 6- and 7-day capacities. Corresponding weekly and monthly ratios for 1950 on the new basis, shown in the tables above, are somewhat lower.

Paperboard operating ratios continue on the basis of a 6-day week.

† Per cents of operation based on "inch-hours" reported to the National Paperboard Association.

CORRUGATED CONTAINERS CONFERENCE

The first general conference to be sponsored by the Corrugated Containers Committee of the Technical Assn. of the Pulp and Paper Industry will be held at the Statler Hotel, Cleveland, Ohio, on May 18. It will be devoted to a consideration of "Corrugated Combining Operations."

F. D. Long, technical director of the Container Corp. of America and chairman of the Corrugated Containers Committee, will preside as moderator.

The following papers will be presented:

"Theoretical and Actual Strength Qualities of Corrugated Board," by R. C. McKee, Institute of Paper Chemistry, Appleton, Wis.

"Present Operating Problems and Future Hopes of a Corrugated Container Plant Superintendent," by R. T. Cassady, vice-president, The Jackson Box Co.

The afternoon program will include the following papers:

"Past, Present and Future Design of Corrugated Combiners," by Walter J. Goettsch, vice-president, Samuel M. Langston Co., Camden, N. J.

"Theoretical Problems of Heating and Drying," by A. F. Montgomery, vice-president, J. O. Ross Engineering Co., Chicago, Ill.

EMPIRE TAPPI MEETING

The annual spring meeting program for the Empire State Section of the Technical Association of the Pulp and Paper Industry has finally been completed. Starting with a get-together dinner at 7:00 p.m. on June 27, it will include three morning sessions of intensive discussion on stream pollution, wood supply, waste paper, hardwood pulping and other vital problems affecting the paper industry. The Defense Department is sending an authority from Washington to discuss the impact of the Armed Forces buying on packaging.

While the major emphasis is on work, ample opportunity for recreation is provided. A trip to North Pole, N. Y., and Whiteface Mountain is planned. The Titanium Pigments Division of National Lead Co. has invited the members to visit its mine and concentrator at Tehawus, N. Y., on June 27 and will serve lunch to those making a definite reservation with Mr. William Willits of Titanium Pigments Division, 99 Hudson Street, New York, N. Y.

Whiteface Inn, the meeting headquarters, reports that already one-third of their rooms are reserved. The Inn has facilities for only 300.

NEW NAT. CONTAINER PLANT

National Container Corp's. twelfth corrugated paper box factory is planned for Milwaukee, Wis. The plant should be completed by the end of 1951.

OBITUARIES

Arthur B. C. Drew, died April 22. For more than 30 years, Mr. Drew was general superintendent of the paper mill of The Pairpoint Corp., New Bedford, Mass., retiring from this position early in 1940. He was a charter member of the Connecticut Valley Division of The American Pulp and Paper Mill Superintendents Assn., served as chairman of the Division for three years, and was national president of the association for the year 1940-1941. In November 1943, he was made a life member of the association. Mr. Drew is credited with the development of a number of special papers for use in the textile trade and with the invention of an adjustable bearing for application on papermaking machines.

Harvey W. Clements, manager of the Chicago General Sales Division of the Bemis Bro. Bag Co. since 1930, died April 11 at Chicago.

Robert L. Richmond, 38, died April 15. He was vice-president and general manager of the Coating Division of Potdevin Machine Co. of New York City.

Louis N. Brenner, 62, assistant general manager of the St. Regis Paper Co., Oswego, N. Y., died unexpectedly on April 18.

CLEARING HOUSE

HELP WANTED

MEN WANTED
POSITIONS OPEN

We can place—general supt. Fourdrinier mach. paper and pulp mill; asst. supt. cyl. board mill; technical director fine paper mill; chief chemist to head up technical staff bleached kraft and board mill.

Young chemical engineers and chemists for positions paying up to $6,000 year; finishing foreman fine papers; converting foreman; machine foremen (cylinder and fourdrinier); machine tenders and back tenders; master mechanics, plant engineers, designers, draftsmen and mechanical engineers, positions paying up to $12,000 yr.; pulp board procurement man; cost accountant; salesman to sell mechanical equipment to paper and pulp mills.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
295 Washington St., Boston 8, Mass.
SPECIALISTS IN PLACING PULP AND PAPER MILL EXECUTIVES

M-4

WANTED—CHEMIST OR CHEMICAL ENGINEER experienced in the development and testing of the paper resins used for wet-strength, coatings and adhesives. Permanent position with established resin manufacturer. State qualifications, experience and salary desired. Address Box 51-223, care Paper Trade Journal.

M-4

SALESMAN with experience in the pulp and paper making processes is desired by a manufacturer of special pulp treating machinery to travel in the United States and Canada. Previous sales experience desirable, but not necessary. This is an excellent opportunity for an aggressive, ambitious man of high character and ability. Address Box 51-214 care Paper Trade Journal. M-4

RESEARCH-DEVELOPMENT

Large research and development laboratory has excellent opening for experienced paper chemist. Ph.D. preferred. Location: near New York City. Submit outline of qualifications. Address Box 51-215 care Paper Trade Journal.

M-11

WANTED — TOP GRADE SALESMANAGER for an eastern chipboard mill. Fully experienced and capable. Furnish details of experience, capabilities and references. Excellent opportunity. Address Box 51-78 care Paper Trade Journal. TF

SUPERINTENDENT OF FINISHING MILL

Outstanding paper converter in midwest has exceptional opening for man familiar with brush coaters, air knife coaters, and other related equipment.

Must have a record of successful operation in this field.

In reply give complete information as to age, education, salary, family, and reason for seeking change. Also please send photo.

Reply to Box Number 51-200, care Paper Trade Journal. M-4

SALARIED POSITIONS $3,500 to $35,000. We offer the original personal employment service (established 41 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

QUALITY CONTROL ENGINEER

Good opportunity for man experienced with mill operation to take charge quality control supervision in modern board mill specializing in high grade folding box board located in New York Metropolitan Area. System to eventually be integrated with folding box plant.

Address Box No. 51-150, Paper Trade Journal M-4

PRODUCTION CHIEF

Paper converting, nationally known. Printing, coating, gumming, laminating, finishing operations. Lifetime position for top-flight production executive. Our people know of this ad. Send full details confidentially to President, Box 51-222, care Paper Trade Journal. TF

WORKING SUPERINTENDENT for small, fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-87 care Paper Trade Journal. TF

GRADUATE MECHANICAL ENGINEER—With sufficient ability and experience in the manufacture of fine papers to be responsible for development program and to design, layout and supervise installation of equipment in midwestern mill. Address Box 51-131 care Paper Trade Journal. My-25

WANTED — EXPERIENCED, COMPETENT PURCHASING AGENT for an eastern chipboard mill. Must be capable and fully experienced. Furnish details of experience, capabilities and references. Excellent opportunity. Address Box 51-153 care Paper Trade Journal. TF

CHEMICAL ENGINEER to fill position of Assistant Quality Control Supervisor in large fiber insulation board manufacturing plant, located in South. All replies confidential. Our personnel know of this ad. Address Box 51-208 care Paper Trade Journal. M-18

PAPER MILL CHEMIST—Must have thorough knowledge of high grade boxboard, test liner and imitation kraft. State full experience, qualifications and references in first letter. Address Box 51-212 care Paper Trade Journal. M-11

CONSULTING FIRM now organizing in Southeast, needs Engineers and Draftsmen with Kraft pulp and paper experience in structural, mechanical, piping and electrical design and layout. Good chance to get in on start with incentive pay and security. In first letter please include full details on training and experience (salaries in each case), references, draft or military status, etc. Address Box 51-225 care Paper Trade Journal. M-18

SITUATIONS WANTED

EXECUTIVE ACCOUNTANT

Capable, cost minded administrative executive, age 40, available immediately. Fully experienced in multi-plant paperboard, folding carton and printing industry. Box 51-197 Paper Trade Journal. M-11

SUPERINTENDENT—TOUR BOSS. Qualifications—Tissue Mill—all grades. Some board experience. Available at once. Address Box 51-179 care Paper Trade Journal. M-4

PLANT ENGINEER — Experienced Maintenance and engineering sulphite pulp and paper, desires opportunity with expanding concern. Address Box 51-163 care Paper Trade Journal. TF

FINE PAPER EXECUTIVE—A practical paper maker with long experience seeks substantial position. Thorough knowledge of coloring. Good educational background. Address Box 51-195 care Paper Trade Journal. M-4

TECHNICAL GRADUATE — Twenty-six years practical experience, cylinders and fourdriniers, also converting. Available for managerial, engineering or administrative duties. Kraffs, boards and specialties. Address Box 51-206 care Paper Trade Journal. M-4

SUPERINTENDENT — Broad experience as practical paper maker with considerable technical training. Proven ability in Fourdrinier and Yankee Machine mills manufacturing high specialized grades. Age 45. Address Box 51-211 care Paper Trade Journal. Ja-11

CHEMIST—B.S. Degree. Extensive experience in coated and fancy paper industry as coating superintendent, superintendent of intaglio, surface and aniline printing. Available in near future as technical or production manager. Address Box 51-224 care Paper Trade Journal. M-18

FOR SALE

FOR IMMEDIATE DELIVERY—Two (2) sets of rolled bronze plates for Bird 5A Screens. One set 18 cut—½" pitch, one set 15 cut—¾" pitch. All used little and in excellent condition. Moraine Paper Co., West Carrollton, Ohio. M-25

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $3.50. If repeated ½ rate will be charged for each consecutive repetition.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $3.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $3.50.

If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

FOR SALE

FOR SALE

FOR SALE

REBUILT ELECTRICAL MACHINERY

AC MOTORS (3 ph. 60 cy.)

HP	Make	Wdg	Spd.	Type
1200	G.E.	S.R.	277	MT
500	G.E.	S.R.	450	MT
400	G.E.	S.R.	450	MT
300	G.E.	S.R.	450	I M
250	Al.Ch.	Syn.	600	
200	G.E.	S.C.	600	IK
150	G.E.	Syn.	600	ATI
150	Westgh.	Syn.	600	5 Syn.
150	West.	S.C.	1800	CS
125	West.	Syn.	277	
100	G.E.	S.R.	450	I M
100	Al.Ch.	S.C.	720	AR3
100(4)	West.	S.C.	1200	CS
75	West.	S.C.	900	CS
75	G.E.	S.C.	575	ITL
60	West.	S.C.	1720	CS
30	Al.Ch.	S.C.	900	AR
30	West.	S.C.	1720(Esc.)	CS400
30	G.E.	S.C.	1160	I K
30	Vert. G.E.	S.C.	1150	KT525
25	800 v. West.	S.C.	1720	CS500
15	Gr.Wh.	S.C.	850	
10	West.	S.C.	1720	CS

HP	Make	Wdg	Spd.	Type
25	West.	S.C.	1200	CS
20	Al. Ch. (Esco)	S.C. (Hi-Torq)	1065	ARWHH
20	West.	S.C.	1750	CS
15	West.	S.C.	1750	CS
10	West.	S.C.	1750	CS500C
10	West.	S.C.	575	CS575C
10(8)	Al.Ch.	S.C.	575	ARY
10	West.	S.C.	1200	CS575C
7½(3)	Al.Ch.	S.C.	570	ARY
7½	G.E.	S.C.	1200	KT
7½	West.	S.C.	3440	CS354Y
5	West.	S.C.	3440	CS
5/11½	L.A.	S.C.	580/1160	3525
5	Master	S.C.	1155/37	PA
5	Barks	S.C.	430	KM2
3	West.	S.C.	1750	
3 800v.	West.	S.C.	1750	CS234

TRANSFORMERS

KVA	MAKE	PRI.	SEC.
1—1000 (3 PH)	G.E.	24000	2200Y
1—500	West.	22000	2300
1—250	Al.Ch.	22000	2300
1—50	G.E.	2400	120/240
4—25	West.	2400	120/240

MOORHEAD ELECTRICAL MACHINERY CO.

OAKDALE, PA., Pittsburgh District — Pittsburgh Tele. WAlnut 1-4300 — M-4

FOR SALE

36" Beck Sheeter, jogger delivery only.
42" Moore & White Sheeter, with or without Layboy.
45" Hamblet Sheeter.
58" Finley Sheeter.
100" Dillon Sheeter.
92" Hamblet Sheeter with M & W Layboy.
68" Oswego mill type Power Cutter.
57" Brown & Carver Power Cutter.
32" Hobbs shear cut Slitter.
40" Langston shear cut Slitter.
52" Cameron #3 model 5 Slitter.
NEW Wolverine "Cub" Sheeters 15" and 38" width.
NEW "Famous" Balers, both hand and power.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.)

FOR SALE—Cady Paper Testing Scale and Cambridge Moisture Indicator. Like new. Both $75. Address Box 51-221 care Paper Trade Journal. M-4

FOR SALE—Cameron 42" type 26-2A Slitter, like new, hardly run, with tensets score cut slitters. Address Box 51-220 care Paper Trade Journal. M-11

FOR SALE—65" Seybold Paper Cutter; 36" Slitter & Rewinder, 48" Sheeter with Layboy; 30" Waldron 6-color Wall Paper Printing Press; 29 x 40 Thomson Platen Die Cutter; 6" Brightwood Box Machine. Address Box 51-217 care Paper Trade Journal. TF

FOR SALE

1—Sandusky Couch Roll—126" drilled face x 22" diameter.
1—123" 3 bowl revolving reel.

BEATERS
1—Dilts Iron Tub Laboratory Beater. Beater roll 14" diameter x 10½" face, including motor.

CALENDER STACKS
1—72" 5 roll Calender Stack.
1—3 roll pressure calender—32" x 108".
1—72" 4 roll calender stack. (Extra heavy duty).
1—80"—3 roll.

CHEST
1—Cast Iron Stock Chest, 25' long x 6' high. (With agitator).

CHIPPER
1—30" Murray 4 knife Chipper—anti-friction bearings.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
4—Jeffrey Hammermill.

CYLINDER MOLDS
1—28" diameter x 72" face.
1—28" diameter x 79" face.
2—36" diameter x 54" face.
1—36" diameter x 90" face.
1—48" diameter x 72" face.
4—36" diameter x 78" face.

DRIVES
1—#6½ Reeves Drive.
1—#4 Reeves Drive.
1—Reliance Electric Drive, complete with 5 gear head motors.
2—#3 Reeves Drives (totally enclosed).

V-BELT DRIVE
1—21¼" diameter x 7½" face, 5 groove.
1—16½" diameter x 7½" face, 5 groove. (With clutch).

DRYERS
1—Complete unit, consisting of 6 dryers, 36" diameter x 38" face, including frames, gears, anti-friction bearings.
7—24" diameter x 48" face.
1—48" diameter x 91" face.
3—36" diameter x 96½" face.
1—36" diameter x 145" face.
1—24" diameter x 130" face.
1—48" diameter x 70" face.
1—48" diameter x 82" face.
2—Dryers 48" diameter x 134" face.
1—24" diameter x 92¼" face.
3—28" diameter x 48" face.
1—84" diameter x 48" face.
1—60" diameter x 68" face.
1—48" diameter x 68" face.
2—36" diameter x 66" face.
1—20" diameter x 61" face, complete with frames.

FLAT SCREENS
1—6 plate Shartle Flat Screen
7—Packer, 12 plate, roller shoe type.

FRAMES
Vertical frames for 100 dryers, 48" diameter, with bearings.

JORDANS
1—Herne Jordan.
2—Noble & Wood Mammoth.

LIME SLUDGE FILTERS
3—IMPCO Lime Sludge Filters, vacuum type, 5' diameter x 4' face.
2—IMPCO Lime Sludge Filters, vacuum type, 5' diameter x 10' face.

MOTORS
Write us regarding your requirements.

PRESSES
3—Beu Primary Presses, complete, 148" face. Anti-friction bearings. Also all types of rolls for 148" wet end.

PULLEYS
Various cone and assorted pulleys.

PULPERS
1—Jones Pulper. Complete with motor and drive.
1—Noble & Wood Pulper—Iron Tub.

PUMPS
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.
4—Shartle Brothers circulating pumps, each 4,000 g.p.m.

REEL
1—123"—3 bowl Revolving Reel.

REFINERS
2—#1 Claflin Refiners.

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2 Bird Rotary Screen.
1—#2A Bird Rotary Screen.

SAVEALLS
1—#5 Bird Saveall.
3—Savealls, 36" diameter x 136" face cylinder molds, iron end vats.

SHEETERS
1—64" Hamblet.

SHREDDERS
2—Daniels Rag Cutters.

SLITTERS & WINDERS
1—42" Cameron—Type 48-4-B
2—42" Cameron—Type 24-2-A.
1—118" 2 drum Waldron
2—112" Cameron—Type 18.
1—104" Beloit two drum winder.
1—42" Cameron Constant Tension with pneumatic control.
1—42" Cameron—Type 6.
1—52" Cameron—Type 8-S.
1—62" Cameron—Type 26-2A.
1—42" Cameron—Type 12 (Mill type).
1—42" Johnstone Slitter.
1—82" Moore & Whtie 4 drum winder.
1—82" Cameron—Type 10-10.

STOCK PUMPS
1—10 x 20 Shartle Duplex.
1—7 x 16 Shartle Duplex.
1—10 x 20 Shartle Triplex.
Advise as to your requirements.

SUCTION COUCH ROLL
1—Sandusky Couch Roll 126" drilled face x 22" diameter

VACUUM PUMPS
1—#1 Nash Hytor.
1—N-82 Nash, for Fulton-Midwest System.

YANKEE DRYERS
1—48" Face x 84" Diameter, Frames & Bearings.
1—48" face x 60" diameter including frames and anti-friction bearings.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?
Wanted Cylinder and Fourdrinier Machines (complete mills).

Paddy Ross, Pres. — **J. J. ROSS COMPANY** — Ben Kurs, Treas.

250 Frelinghuysen Ave. — Tel.—Bigelow 3-3720 — Newark 5, N. J.

FOR SALE

FOR SALE

Slightly used 7 ft. horizontal drum tester in good condition. Conforms to TAPPI T-404m-50. Drum driven through central axle. Sheet metal lined face plates and cast iron conical impact hazard. Includes 1 hp. 3 phase gear motor, chain drive, counter and safety guard. Ready for immediate shipment. For additional information, write:

PILLSBURY MILLS, INC.
Res. & Dev. Dept.
200 Third Avenue S.E.
Minneapolis 14, Minnesota

M-4

FOR SALE

1—Variable Speed Terry Turbine—150 H. P., 125# Steam Pressure, 15# Exhaust Pressure.

Direct connected to line shaft on 6 cylinder Board machine, speed from 30 ft. per minute to 230 ft. per minute.

Available in August. Can be seen in operation.

Address Box 51-102 care Paper Trade Journal M-11

FOR SALE

Motor drives stack directly connected by Waldron flexible coupling with herringbone gear reduction drive & Kohler system electric hookup.

9 roll stack (Holyoke) 32" wide.
1 bottom steel roll 18" dia. with 10" journal.
3 intermediate steel rolls 12" dia. with 6" journals.
3 rubber rolls—14" dia.
1 paper roll—14" dia.
1 steel top roll 10" dia.

Water cooled bearings.

Web frame 17" between guides so intermediate rolls can be removed through sides.

Compound levers and weights.

2 shaft hand revolving reviewer to take 30" dia. roll. Drive consists of D.C. Diehl 75 H.P. Motor 230 V with Cutler Hammer, magnetic clutch and Kohler system for variable speed.

Address Box 51-185 care Paper Trade Journal J-8

FOR SALE

Toilet Winders

2—72" Hudson-Sharp (Surface type winder)
1—84" Glasinger

J. J. ROSS COMPANY
250 Prelinghuysen Ave., Newark 5, N. J.
Tel BIgelow 3-3720 M-4

FOR SALE

1—84" 9-roll Supercalender Stack. Complete with drives.

J. J. ROSS COMPANY
250 Prelinghuysen Ave., Newark, N. J.
Tel BIgelow 3-3720 M-4

FOR SALE

1—Waldron two sided Synchrocast Coater —146" wide, practically new.

J. J. ROSS COMPANY
250 Prelinghuysen Ave., Newark, N. J.
Tel. BIgelow 3-3720 M-1

FOR SALE

99" Bagley & Sewall Fourdrinier Paper Machine. Suitable for light papers, also newsprint. Complete, good condition. Immediate Delivery.

Address Box 51-231 care Paper Trade Journal. M-4

FOR SALE—6 cyl. board machine, 4 primary, 3 main presses; 48 dryers; 2 cal. stacks; duplex cutter; suitable for manufacture of board or paper usually made on cylinder machines. Address Box 51-219 care Paper Trade Journal. M-18

FOR SALE

For Sale and Wanted
all grades

WASTE PAPER

GLOVE CO., INC.
557 Water St., N. Y. Dlegon 3-6160-1-2-3
Inquiries Solicited M-4

BOUGHT — SOLD

Soda Ash—Caustic Soda
Titaniums—Lithopone—Zinc Oxides
Glycols—Cellosolves—Ethanolamines
Bichromates—Dyes—Colors, etc.

CHEMICAL SERVICE CORPORATION
86-94 Beaver St., New York 5, N. Y.
M-4

FOR SALE

40" Langston Type A Shear Cut Slitter. and Rewinder.
20 sets of Slitters.
2—3" diameter Collapsible Winding Shafts.
AC motor equipment.
A-1 condition. Immediate delivery.

Address Box 51-230 care Paper Trade Journal. M-4

FOR SALE—74" Knowlton Traveling Shear Cut-off Knife.—Bargain. Address Box 51-105 care Paper Trade Journal. TF

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE—PAPER COATING RODS — Wire wound EQUALIZERS and blank rods. DE NEVE & CONSLER CO., Box 817, Rochester, 3, N. Y. M-4

FOR SALE—1—S-10-H Broughton Oscillating Shower #250-H for 138" wire with two master strainers unused. $515.00 shipping pt. Address Box 51-226 care Paper Trade Journal. M-4

FOR SALE—One Combination Bag machine, never used. Will make window and plioface bags also. Reasonable, for particulars address Monarch Industrial Co., 2942 W. 25th St., Brooklyn, 24, N. Y. M-4

WANTED

WANTED—For foreign use—Cylinder Paper Board Machine 84" trim or better. 30 to 60 tons production and auxiliary equipment. Advise if in operation or assembled for inspection. Address Box 51-304 care Paper Trade Journal. TF

WANTED

WANTED

Serviceable Grocery Bag Machine
8 through 20 lb. sizes.
Recent Model Potdevin preferred.

Address Box 50-450, care Paper Trade Journal. TF

WANTED TO BUY

Cylinder Board Machine trimming about 80" - 100" for export. Box 51-203 c/o Paper Trade Journal.

M-4

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-89 care Paper Trade Journal. TF

WANTED—Brightwood Box Machine, Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-88 care Paper Trade Journal. TF

WANTED — Used 64" Carthage 10 Knife Chipper with or without spout. Must be in usable condition. Green Bay Paper & Pulp Co., Green Bay, Wisconsin. M-4

WANTED—2 Good complete Cameron Winders 42" to 84". Principals only. Address Box 51-227 care Paper Trade Journal. M-25

FOR SALE—106" Moore & White Sheeter complete with Slitting Knives, automatic layboy and back stand. Good condition. Address Box 51-228 care Paper Trade Journal. M-25

GOVERNMENT BIDS

PROPOSALS FOR THE SALE OF REFUSE WOOD AND SCRAP METALS, AND THE REMOVAL OF DEBRIS AND SAWDUST.

U. S. GOVERNMENT PRINTING OFFICE,
WASHINGTON, D. C., *April 30, 1951.*

Sealed proposals will be received at this Office until 2 o'clock p. m., May 16, 1951, for the disposal and sale of Refuse Wood, Sawdust, and Scrap Metals which may accumulate, and for the removal of debris from the Government Printing Office during the fiscal year beginning July 1, 1951. The right to reject any and all bids and to waive defects is reserved. Detailed specifications of the estimated quantities to be sold, accompanied by blank proposals and giving regulations with which bidders must comply, may be obtained by addressing—

JOHN J. DEVINY,
Public Printer.
M-10

DO YOU
want to buy or sell equipment?
ARE YOU
looking for qualified help?
LOOKING FOR
a better job?

—all your problems can be solved through the Clearing House Columns of Paper Trade Journal.

Thousands of advertisers have used these pages with excellent results.

Try it.—Copy received on Monday will appear in the following Thursday's Issue.

"EXCELSIOR" FELTS

The Trademark of Felts of Superior Quality for Every Grade of Paper

KNOX WOOLEN COMPANY

CAMDEN, MAINE

WEST VIRGINIA PULP and PAPER COMPANY

230 Park Ave., New York 17, N. Y.
35 East Wacker Drive, Chicago 1, Ill.
Lincoln-Liberty Bldg., Philadelphia 7, Pa.
503 Market St., San Francisco 5, Calif.

Manufacturers of West Virginia Mill Brand Papers

SUPERCALENDERED ENGLISH FINISH LITHOGRAPH LABEL OFFSET EGGSHELL MUSIC POSTER BOND WRITING

ENVELOPE MIMEOGRAPH INDEX BRISTOL POST CARD COVER CUP AND CONTAINER FILE FOLDER TAG COATED MACHINE COATED

KRAFT LINER BOARD
KRAFT CONVERTING AND KRAFT ENVELOPE

MILLS

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

FOREST PRODUCTS

Their Sources, Production And Utilization

By A. J. Panshin, E. S. Harrar, W. J. Baker, and P. B. Proctor
The American Forestry Series
549 pages, Illustrated, $6.00

Here is practical information on the origin, methods of converting, and most profitable use of forest products. This new book brings you the latest techniques in the manufacture and use of wood products—including wood furniture, veneers and plywood, wood flour, round timbers and railroad ties. It points up recent developments in the production of products derived through chemical processes—including pulp and paper, insulation materials, cellulose, filaments and films, carbonization and destructive distillation of wood. Miscellaneous wood products such as maple sirup and sugar, dyes, tannins, etc. are likewise discussed from the standpoint of efficiency in producing and using.

Turn to this guide when you want valuable data on recent developments in acid stimulation in naval stores operations . . . the use of synthetic resins in plywood manufacture . . . the application of radio frequency to wood gluing and pulping of wood, and many other advances in technology. The technical gases of manufacturing are treated in clear everyday language, and numerous illustrations and charts simplify your understanding of topics discussed.

New Material on:
- Thermal and Sound Insulation
- Cellulose Films and Filaments
- Wood Furniture
- Wood Saccharification
- Problems of Wood Waste Utilization

LOCKWOOD TRADE JOURNAL CO., INC.
15 West 47th St. New York 19, N. Y.

H. WATERBURY & SONS CO.

ORISKANY, N. Y.

Manufacturers of

WATERBURY FELTS

Since 1860

BUY

U. S. SAVINGS

BONDS

WHERE TO BUY

ABRASIVES
Monsanto Chemical Co.
Naugatuck Chemical
Division of U. S. Rubber Co.
Norton Co.
ADHESIVES
American Cyanamid Company
Plastics & Resins Division
E. I. Du Pont De Nemours & Co., Inc.
The Goodyear Tire & Rubber Company
Monsanto Chemical Co.
Morningstar, Nichol, Inc.
National Starch Products, Inc.
Napco Chemical Co.
Plaskon Division,
Libbey-Owens-Ford Glass Co.
Stein, Hall & Co., Inc.
AGITATORS
American Paper Machy. & Engrg. Works, Inc.
Appleton Machine Co.
The Cowles Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.
Shartle Brothers Machine Co.
ADJUSTABLE SHAKE MOTION
Manchester Machine Co.
ADJUSTABLE TILTING MOTOR BASE
Lovejoy Flexible Coupling Co.
ALLOYS
Michigan Steel Casting Co.
ANTIFOAM
American Cyanamid Company
Industrial Chemicals Division
National Aluminate Corp.
Napco Chemical Co.
APRON CLOTH
Williams-Gray Co.
BAG MACHINES
Dilts Machine Works
Potdevin Machine Co.
BED PLATES
Bahr Brothers Mfg. Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lakewood Div., Lukens Steel Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
BELTING
Allis-Chalmers Mfg. Co.
Goodrich, B. F., Co.
The Goodyear Tire & Rubber Company
Link Belt Company
BIN DISCHARGERS
Hoft Company, Inc.
Stephens-Adamson Mfg. Co.
BLEACHING AGENTS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Rohm & Haas Co.
Virginia Smelting Co.
BLEACHING APPARATUS
E. D. Jones & Sons Co.
Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
BLOW PIPES & PITS
Carthage Machine Co.
Kalamazoo Tank & Silo Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company
BOILERS
Babcock & Wilcox Co.
Combustion Engineering-Superheater, Inc.
BOTTOMS
Kalamazoo Tank & Silo Co.
Valley Iron Works Co.
BOXBOARD SCALES
Thwing-Albert Instrument Co.
BRUSH ROLLS
M. W. Jenkins Sons, Inc.
BRUSHES
M. W. Jenkins Sons, Inc.
Geo Reidel & Son
The Sandy Hill Iron & Brass Works
Smith Winchester Mfg. Co.
Weber, Herman G., & Co., Inc.
BALL MILLS
F. L. Smidth & Co.
BARK BURNER
Combustion Engineering-Superheater, Inc.
Hoft Company, Inc.
Nichols Engrg. & Research Corp.
BARKERS AND CHIPPERS
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Carthage Machine Co.
D. J. Murray Mfg. Co.
Valley Iron Works Co.
BARS
Ditts Machine Works
E. D. Jones & Sons Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
BASIC WEIGHT SCALES
Thwing-Albert Instrument Co.
BEARINGS
The Bagley & Sewall Company
Black Clawson Company
E. D. Jones & Sons Co.
Link Belt Company
Magnus Metal Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
SKF Industries
Stephens-Adamson Mfg. Co.
Timken Roller Bearing Co.
Valley Iron Works Co.
BEATERS AND JORDANS
American Paper Machy. & Engrg. Works, Inc.
The Appleton Machine Co.
Black Clawson Company
Ditts Machine Works
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Morden Machines Co.
D. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
BURSTING TESTERS
B. F. Perkins & Son Inc
Testing Machines, Inc.
CALENDERS
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
Labdell Co.
Edward J. McBride
The Moore & White Co.
Perkins & Sons, Inc., B. F.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
CARRIER ROPE
Williams-Gray Co.
CASEIN
American Cyanamid Co.
Industrial Chem. Div.
Bonge Pulp & Paper Co.
Hercules Powder Co.
CASTINGS
Appleton Machine Co.
The Bagley & Sewall Company
Black Clawson Company
Babcock & Wilcox Co.
Carthage Machine Co.
Ditts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Hamblett Machine Co.
Labdell United Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Walworth Company
CENTRIFUGAL MACHINERY
Bird Machine Co.
Nichols Engrg. & Research Corp.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.
CHAINS
Stephens-Adamson Mfg. Co.
CHEMICAL COTTON PULP
Hercules Powder Co.

1950 • A Record Year in Sales of GOSLIN • BIRMINGHAM BLACK LIQUOR EVAPORATORS

BEST proof of any product is trade demand. We take pride in the fact that more GB Black Liquor Evaporators were sold in 1950 than during any prior year in our company's 68-year history. A large portion of our plant's extensive facilities is now being utilized in the construction of evaporators for a number of America's leading paper mills. If you are interested in cutting steam costs and effecting minimum salt cake entrainment losses, consult GB engineers regarding your requirements.

GB GOSLIN-BIRMINGHAM MANUFACTURING CO., Inc.
BIRMINGHAM, ALABAMA
CHICAGO: F. M. deBoers and Associates, 20 North Wacker

PROBLEM?

Waste Water Disposal?
Pulp and Water Recovery?
Stream Polution?
Water Filtration?
Water Softening?
Water Conditioning of Any Type?

We can help you—

Nearly 50 years experience building water purifying plants for the Paper Industry—

Send for particulars or a representative will call.

HUNGERFORD & TERRY, INC. CLAYTON, N. J.

Clinton's

PM 3011 Pearl Starch

(For enzyme conversion)

● Specifically processed and controlled for ease of conversion under all practical mill conditions. Also, special grades of starch for:

- BEATERS
- COATING
- LAMINATING
- TUBSIZING

CLINTON

CLINTON FOODS INC., CLINTON, IOWA

CHEMICALS
American Cyanamid Co., Industrial Chem. Div.
Ansul Chemical Co.
Bunge Pulp & Paper Co.
Calco Chemical Co.
Calgon, Inc.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuffs Corp.
Geigy Co., Inc.
B. F. Goodrich Chemical Co.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Naugatuck Chemical Division of U. S. Rubber Co.
Niagara Alkali Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Rohm & Haas Co.
Virginia Smelting Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

CHESTS
The Bagley & Sewall Company
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
Shartle Bros. Mch. Co.

CLEANING MATERIALS
American Cyanamid Company Industrial Chemicals Division
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co.
Wyandotte Chemicals Corp., J. B. Ford Division

CLUTCHES
Appleton Machine Co.
The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.

COATING MACHINERY
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Hudson Sharp Machine Co.
The Mayer Machine Co., Inc.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

COATING MATERIALS
American Cyanamid Company Industrial Chemicals Division
E. I. Du Pont De Nemours & Co., Inc.
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division, Libbey-Owens-Ford Glass Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

COGS
The N. P. Bowsher Co.

COMPLETE FOURDRINIER ROLL GRINDING
Manchester Machine Co.

COMPRESSORS
Allis-Chalmers Mfg. Co.
Nash Engineering Co.
Roots-Connersville Blower Corp

CONDENSATE FILTERS
Hungerford & Terry, Inc.
The Permutit Company

CONSISTENCY REGULATORS
Askania Regulator Co.
Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

CONSTRUCTION CONTRACTORS
C. M. Guest & Sons

CONSULTING ENGINEERS
Birt, F. Paul
Black Clawson Company
Dilts Machine Works
Ebasco Services
Frank W. Egan & Co.
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
The Rust Engrg. Co.
Shartle Bros. Mch. Co.
J. E. Sirrine & Co.
Frank C. Vaughan
John Waldron Corp.
H. G. Weber & Co., Inc.

CONTINUOUS DIGESTER
Paper & Industrial Appliances

CONTROLLERS
Black Clawson Company
The Brown Instrument Co.

CONTROLS
The Brown Instrument Co.
Johnson Corp.
Foxboro Control Co.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

CONVERTING MACHINERY
The Bagley & Sewall Company
Egan, Frank W., & Co.
John Waldron Corp.
Dilts Machine Works
Hudson-Sharp Machine Co.

CONVEYORS
Black Clawson Company
Industrial Brownhoist Corp.
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.
Stephens-Adamson Mfg. Co.

CORES
Elixman Paper Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.

CORROSION RESISTANT
Amercoat Corporation

COTTON LINTER
Railway Supply & Mfg. Co.

COUCH ROLLS
Beloit Iron Works

COUPLINGS
The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lovejoy Flexible Coupling Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES
Cleveland Crane & Engrg. Co
Industrial Brownhoist Corp.
Whiting Corp.

CURL TESTER
Thwing-Albert Instrument Co.

CUTTERS
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Harris-Seybold Co.
Jagenberg-Werke Akt. Ges.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Sandy Hill Iron & Brass
Taylor, Stiles & Co.
Works
The Smith & Winchester Mfg. Co.

CYLINDER MOULDS
Manchester Machine Co.

CYLINDERS
M. W. Jenkins Sons, Inc.

DAMPENERS
Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DECKLE WEBBING
Williams-Gray Co

DEFIBRATORS
American Defibrator Co

DE-INKING
The Cowles Company
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DEINKING CHEMICALS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Nopco Chemical Co.

DE-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.
The Permutit Company

DEMULSIFIERS
Wyandotte Chemicals Corp., Michigan Alkali Div.

DENSOMETERS
Bunge Pulp & Paper Co.
W. & L. E. Gurley

DESIGN CONSTRUCTION
Khamo Servaes

DETERGENTS
American Cyanamid Company Industrial Chemicals Division
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS
American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

DIFFERENTIAL SCALES
Thwing-Albert Instrument Co.

DIGESTERS
Babcock & Wilcox Co.
Blaw Knox Company
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Lakenewest
Pusey & Jones Corp.

DIGESTERS (Continuous)
Paper & Industrial Appliances

DISPERSING AGENTS
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DOCTORS
The Bagley & Sewall Company
Bird Machine Company
Black Clawson Company
Downingtown Mfg. Co.
Lobdell United Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
The Bagley & Sewall Company
Bird Machine Company
Lodding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DRIERS
The Bagley & Sewall Company
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Lakenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

DRILLED SUCTION COUCH ROLLS
Manchester Machine Co.

DRILLED SUCTION DRUM ROLLS
Manchester Machine Co.

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Bird Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp

DRUM WINDERS
Manchester Machine Co.

DRYER DRAINAGE
Stickle Steam Specialties Co

DRYER ROLL PYROMETER
Thwing-Albert Instrument Co.

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

DYESTUFFS
American Cyanamid Company Calco Chemical Div.
Bunge Pulp & Paper Co.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.

ELECTRIC HYGROMETER
Thwing-Albert Instrument Co.

EMBOSSING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

EMBOSSING ROLLS
The Appleton Machine Co.
Gibbs-Brower Company, Inc.
Northern Engraving & Mch. Co.
D. F. Perkins & Son, Inc.
John Waldron Corp.
Wheeler Roll Co.

EMULSIFIERS
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.
Vanderbilt Co., R. T.

EVAPORATORS
Davis Engrg. Corp.
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

EXPANDERS
Mount Hope Machinery Co.

FANS
General Electric Co.
D. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

FEEDERS
Hoffl Company, Inc.
Merrick Scale Mfg. Co.
The Permutit Company
Stephens-Adamson Mfg. Co.

FELTS
Appleton Woolen Mills
Ayer-Hill Mfg. Co.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Morey Paper Mill Supply Co.
Shuler & Benningshofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

FELT CLEANERS
Calgon, Inc.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.
The Sandy Hill Iron & Brass Works

FELT GUIDES
Black Clawson Company
Frank W. Egan & Co.
Gilbert & Nash Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

For superior quality and uniform performance...

OK BRAND

STARCHES

OK BRAND STARCHES for tub and beater sizing are of highest quality, uniformly maintained.

AT YOUR SERVICE! The Hubinger technical staff and laboratories are widely recognized for their thorough and practical knowledge of the use of starch in making paper. Their experience assures you of the *best* product, *tailor-made* to fit *your specific needs*. Consult us on any production problem —at no obligation, of course.

THE HUBINGER COMPANY
KEOKUK, IOWA • • • EST. 1881

PRICE & PIERCE
LTD.

Wood Pulp and Paper Agents

60 E. 42 ST., N. Y. 17

A GRAB FOR EVERY KIND OF LOG HANDLING!

TYPE "Y" FOR DROP PILED LOGS

WELLMAN
Wood Grabs
cut handling costs!

Write for bulletin P3-112 describing this and other types

THE WELLMAN ENGINEERING COMPANY
7028 Central Ave. • Cleveland 4, Ohio

WELLMAN BUILDS:
SPECIAL CRANES
MINE AND SKIP HOISTS
ORE BRIDGES
CLAMSHELL BUCKETS
DRAGLINE BUCKETS
CAR DUMPERS

FILLERS
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

FILTERS
Bird Machine Company
J. M. Huber Corp.
Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Walworth Company

FITTINGS
The Bagley & Sewall Company
Crane Company
Shartle Bros. Mch. Co.
Walworth Company

FLEXIBLE COUPLINGS
Egan, Frank W., & Co.
Lovejoy Flexible Coupling Co.
John Waldron Corp.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.
The Sandy Hill Iron & Brass Works

FORK LIFT TRUCKS
Clark Equipment Company, Industrial Truck Division
Towmotor Corp.

FORMATION TESTERS
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

FORMING MACHINES
Black Clawson Company
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FOURDRINIERS
Beloit Iron Works

FREENESS TESTERS
Testing Machines, Inc.
Williams Apparatus Co.

FURNACES
Hofft Company, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
The Bagley & Sewall Company
Black Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.
Western Gear Works

GRAPPLES
Blaw-Knox Company

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Labdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES
The Bagley & Sewall Company
Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
The Sandy Hill Iron & Brass Works

GUMS
National Starch Products, Inc.
Stein-Hall Co., Inc.

HEAT EXCHANGERS AND RECOVERY SYSTEMS
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
E. D. Jones & Sons Co.
General Electric Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

HUMECTANTS
Aktivin Division, Heyden Chemical Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company, Industrial Chemicals Division
B. F. Goodrich Chemical Co.

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TRACTORS
Clark Equipment Company, Industrial Truck Division
Towmotor Corp.

INKOMETER
Thwing-Albert Instrument Co.

INSTRUMENTS, TESTING AND MEASURING
Beckman Instruments, Inc.
Brown Instrument Co.
Bunge Pulp & Paper Co.
Cambridge Instrument Co.
General Electric Company
W. & L. E. Gurley
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co.

JOINTS
The Bagley & Sewall Company
Beloit Iron Works
Johnson Corp.
Lovejoy Flexible Coupling Co.
Shartle Bros. Mch. Co.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Simons Worden White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KRAFT WRAPPING PAPERS
Canadian Newsprint Supply Co.

LABORATORY CORRUGATOR
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Beckman Instruments, Inc.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LIFT TRUCKS
Clark Equipment Company, Industrial Truck Division

LINTER COTTON
Railway Supply & Mfg. Co.

LUBRICANTS
Gulf Refining Co.
Sinclair Refining Co.

Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler Systems)

MATERIALS HANDLING
Clark Equipment Company
Industrial Truck Division
Cleveland Crane & Engrg. Co.
Dilts Machine Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Stephens-Adamson Mfg. Co.
Testing Machines, Inc.

MICRO-CRYSTALLINE WAXES
Bareco Oil Co.
Bunge Pulp & Paper Co.
Moore & Munger
Sun Oil Company

MOISTURE CONTENT CONTROL
Cambridge Instrument Co.
Stickle Steam Specialties Co.
Williams Apparatus Co., Inc.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.

NEWSPRINT
Bunge Pulp & Paper Co.
Canadian Newsprint Supply Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Spray Engrg. Co.

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.
Clark Equipment Company
Industrial Truck Division

PALLET TRUCKS
Clark Equipment Company
Industrial Truck Division

PAPER MACHINE DRIVES
The Bagley & Sewall Company
Manchester Machine Co.

PAPER MACHINES
The Bagley & Sewall Company
Beloit Iron Works
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lakenwold
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.

PARAFFINE WAXES
Moore & Munger
Sun Oil Company

PARAFFIN WAX EMULSIONS
Napco Chemical Co.

PASTING MACHINES
Beloit Iron Works
Black Clawson Company
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

PEBBLE MILLS
F. L. Smidth & Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

pH METERS
Cambridge Instrument Co.
Tinwing-Albert Instrument Co.

PIPE
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
Walworth Co.

PITCH CONTROL
American Cyanamid Company
Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Napco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company
Industrial Chemicals Division
Aktivin Division, Heyden Chemical Corp.
B. F. Goodrich Chemical Co.
Naugatuck Chemical
Division of U. S. Rubber Co.
Napco Chemical Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
J. O. Ross Engrg. Corp.
Lukenweld Division
Lukens Steel Company
Timken Roller Bearing Co

PLUGS
The Appleton Machine Co.
Black Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

POPE TYPE REELS
Egan, Frank W., & Co.
Manchester Machine Co.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.
Thwing-Albert Instrument Co.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESS ROLLS
Beloit Iron Works

PRESSURE VESSELS
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.

PRESSES
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULLEYS
Lovejoy Flexible Coupling Co.

PULP CLASSIFIER
The Bauer Bros. Co.
Thwing-Albert Instrument Co.

PULP CLEANERS
Nichols Engrg. & Research Corp.

PULP STOCK VALVES
Crane Company
Shartle Brothers Machine Co.

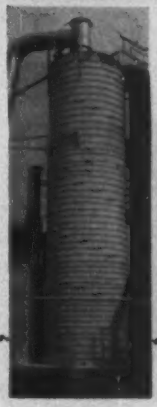
PULPERS
Apmew, Inc.
Bauer Brothers Co.
The Cowles Company
Dilts Machine Works
E. D. Jones & Sons Co.
Morden Machines Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bunge Pulp & Paper Co.
Gottesman & Co., Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Rustigouche Co., Ltd.

It's a long way back over the years to the cumbersome, bulging valise of the gay, uncomfortable nineties. Over that stretch, also, the quality of Fourdrinier wire cloth and its product, paper, has immeasurably improved. Lindsay takes pride in the contributions it has made in these fields.

THE LINDSAY WIRE WEAVING COMPANY
14001-14299 ASPINWALL AVE. • CLEVELAND 10, OHIO

Lindsay WIRES



MARIETTA PROTECTS PULP and CHIPS from FIRE MOISTURE DETERIORATION

MARIETTA industrial storage systems cut material handling costs and provide SAFE storage for bulk materials.

Durable, tough Aglite staves keep wood chips and wood pulp BONE DRY. Aglite is fireproof and acid-resistant. Erection of a MARIETTA storage system usually brings about a substantial reduction in insurance rates.

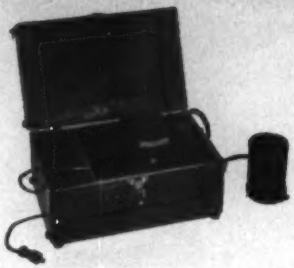
FAST ERECTION—Trained MARIETTA erection crews do the entire job in record time without disturbing your present set-up or production facilities.

write for full details

THE MARIETTA CONCRETE CORP.
MARIETTA, OHIO
Baltimore, Md. Charlotte, N. C.

PHOTOVOLT

Photoelectric REFLECTION METER



for accurate measurement of

Brightness and Opacity

of pulp and paper in terms of TAPPI specifications. Also for

Gloss and Color

tests on paper, cardboard and other paper products.

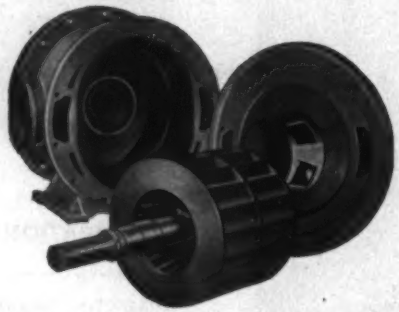
Portable, reliable, rugged, simple to operate

PHOTOVOLT CORP.

95 MADISON AVE. NEW YORK 16, N. Y.

Also: Colorimeters, pH Meters

SIMPLICITY



NASH VACUUM PUMPS HAVE ONE MOVING PART

Operating advantages made possible by the Nash principle, and present in no other type of vacuum pump, permit a new level of operating economy. Nash Vacuum Pumps have but one moving part, a rotor cast in one piece, and revolving without metallic contact. There are no valves, no pistons or sliding vanes, no internal parts requiring wear adjustment or lubrication.

NASH ENGINEERING COMPANY

SOUTH NORWALK, CONNECTICUT, U. S. A.

PULPSTONES
Norton Company

PULP TESTERS
Paper and Pulp Testing Laboratories
Williams Apparatus Co., Inc.

PULVERIZING MILLS
Combustion Engineering-Superhester, Inc.
F. L. Smidth & Co.

PUMPS
American Paper Machy. & Engrg. Works, Inc.
Allis-Chalmers Mfg. Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Buffalo Pumps, Inc.
DeLaval Steam Turbine Co.
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Gibbs-Brower Company, Inc.
Byron Jackson Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Roots Connersville Blower Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS
The Dorr Company

RECOVERY SYSTEMS
Babcock & Wilcox Co.
Chicago Bridge & Iron Co.
Combustion Engineering-Superhester, Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS
The Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
The Cowles Company
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout Waldron & Co., Inc.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
APMEW, Inc.
Allis-Chalmers Mfg. Co.
Bird Machine Company
General Electric Co.
Johnson Corp.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies

RESINS
American Cyanamid Company, Plastics & Resins Division
The Dow Chemical Company
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Rohm & Haas Co., Resinous Products Div.

ROLLS
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell United Co.
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
U. S. Rubber Co.
Valley Iron Works Co.
Waldron Corp., John
Wheeler Roll Co.

ROLL COVERS
The Goodyear Tire & Rubber Company

ROLL HANDLING EQUIPMENT
Dilts Machine Works (Kohler Systems)

ROLL STANDS
Cameron Machine Co.
Dilts Machine Works (Kohler Systems)
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS
Black Clawson Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works

ROTARY KILNS
F. L. Smidth & Co.

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Shartle Bros. Mch. Co.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SATURANTS
B. F. Goodrich Chemical Co.

SATURATING MACHINES
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Chicago Bridge & Iron Co.

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Company
The Bagley & Sewall Company
Bird Machine Company
Carthage Machine Co.
The Cowles Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.

SHEET MACHINES
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Valley Iron Works Co.
Williams Apparatus Co., Inc.

SHEETERS
Jagenberg-Werke Akt. Ges.

SHOWER PIPES
Bird Machine Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZE PRESSES
Manchester Machine Co.

SIZING
American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Stein-Hall Co., Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

SLIME CONTROL
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SLITTERS
The Bagley & Sewall Company
Black Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Clark-Aiken Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
Chicago Bridge & Iron Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.

SOLUBLE OILS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

SPECIAL MACHINERY
Dilts Machine Works
Egan, Frank W., & Co.
The Sandy Hill Iron & Brass Works
John Waldron Corp.

SPLICING TISSUE
Bunge Pulp & Paper Co.
Williams-Gray Co.

STAINLESS STEEL
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH
A. E. Meincke & Son, Inc.
Clinton Foods, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS
The Moore & White Co.
Shartle Bros. Mch. Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Johnson Corp.
Stickle Steam Specialties Co.

STEEL
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
Chicago Bridge & Iron Co.
The Sandy Hill Iron & Brass Works

STRETCH TESTER
Thwing-Albert Instrument Co.

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION ROLLS
Beloit Iron Works

SULPHITE SPECIALTIES
Canadian Newsprint Supply Co.

SULPHUR
Texas Gulf Sulphur Co.

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Company, Calco Chemical Div.
Ansul Chemical Co.
Virginia Smelting Co.

SUPERCALENDERS
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Cyanamid Company Industrial Chemicals Division
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.

TAKE OFF UNITS
Dilts Machine Works (Kohler Systems)

TALC
American Cyanamid Company, Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS
Chicago Bridge & Iron Co.
Kalamazoo Tank & Silo Co.
B. F. Perkins & Sons, Inc.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS
Thwing-Albert Instrument Co.
Testing Machines, Inc.

TENSILE TESTERS
Bunge Pulp & Paper Co.
Thwing-Albert Instrument Co.
B. F. Perkins & Son, Inc.
Testing Machines, Inc.
Nopco Chemical Co.

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Chicago Bridge & Iron Co.
Dilts Machine Works
Downingtown Mfg. Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.

TOOLS
Walworth Company

TRACTORS AND TRUCKS
Clark Equip. Co. of Industrial Truck Div.
Towmotor Corp.

TRANSMISSIONS
Dodge Mfg. Corp.
Link Belt Company
Lovejoy Flexible Coupling Co.
Stephens-Adamson Mfg. Co.

TRAPS
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBE MILLS
F. L. Smidth & Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works

TUBING, MECHANICAL
National Tube Co.

TUBS
Shartle Brothers Machine Co.
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company

UNWINDERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
John Waldron Corp.

USED EQUIPMENT
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.

V-BELTS
Lovejoy Flexible Coupling Co.

VALVES
The Bagley & Sewall Company
Crane Company
Dilts Machine Works
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Walworth Company

VATS
Beloit Iron Works

WASHERS
The Bagley & Sewall Company
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING, EQUIPMENT
Hungerford & Terry, Inc.

WATER CONDITIONING
Calgon, Inc.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.
The Permutit Company
The Sandy Hill Iron & Brass Works

WATER DISPERSIONS
American Cyanamid Company Industrial Chemicals Division
Naugatuck Chemical Division of U. S. Rubber Co.
Rohm & Haas Co., Resinous Products Div.

WATER FINISH EQUIPMENT
Dilts Machine Works

WATER PENETRATION TESTER
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

WATER SOFTENERS
The Dorr Company
Hungerford & Terry, Inc.
The Permutit Company
Wyandotte Chemicals Corp., Michigan Alkali Div.

WATER VAPOR CUPS
Thwing-Albert Instrument Co.

WAXES
Bunge Pulp & Paper Co.

WAXING MACHINERY
Black Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
John Waldron Corp.

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
The Bagley & Sewall Company
Black Clawson Company
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WET STRENGTHENING AGENTS
Plaskon Div., Libbey-Owens-Ford Glass Co.

WETTING AGENTS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

WHITE WATER TREATING EQUIPT.
Hungerford & Terry, Inc.
The Permutit Company
The Sandy Hill Iron & Brass Works

WINDERS & REWINDERS
The Bagley & Sewall Company
Beloit Iron Works
The Appleton Machine Co.
Black Clawson Company
Kohler Systems
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.

WIRE BRUSHES
M. W. Jenkins Sons, Inc.
Williams-Gray Co.

WIRES
Appleton Wire Works
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WOOD CHIP ELEVATORS
Stephens-Adamson Mfg. Co.

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.
The Permutit Company

INDEX TO ADVERTISERS

A

Adams, R. P., Co. — —
Alpha Cellulose Corp. — 44
Allis-Chalmers Mfg. Co. — —
American Cyanamid Co., Calco Chemicals Div. — —
American Cyanamid Co., Industrial Chemicals Div. — —
American Defibrator, Inc. — —
American Leather Belting Assn. — —
American Steel & Wire Co. — —
Ansul Chemical Co. — —
Apmew, Inc. — —
Appleton Machine Co., The — —
Appleton Wire Works, Inc. — 8
Appleton Woolen Mills — 44
Armco Drainage & Metal Products — —
Armco Steel Corp. — 41
Asten-Hill Mfg. Co. — —

B

Babcock & Wilcox Co. — —
Bagley & Sewall Co. — —
Bahr Bros. Mfg. Co. — 44
Bailey Meter Co. — —
Barreco Oil Co. — —
Bauer Bros. Co. — —
Bird Machine Co. — —
Birk, F. Paul — —
Bixby, R. W., Inc. — 47
Black Clawson Co. — 6
Blaw-Knox Co. — —
Bowsher, N. P., Co. — 44
Brown Co. — —
Brown Instrument Div., Minneapolis-Honeywell Reg. Co. — —
Bulkley, Dunton Pulp Co. — —
Bunge Pulp & Paper Co. — —
Byron Jackson Co. — —

C

Cambridge Instrument Co. — —
Cameron Machine Co. — —
Canadian Newsprint Supply Co. — —
Carnegie-Illinois Steel Corp. — —
Carthage Machine Co. — —
Chemipulp Process, Inc. — —
Chicago Bridge & Iron Co. — —
Ciba Co. — —
Clark-Aiken Co. — —
Clark Equipment Co. — —
Classified Advertising — 47
Cleveland Crane & Engrg. Co. — —
Clinton Foods, Inc. — 52
Columbia Steel Co. — —
Combustion Engineering-Superheater, Inc. — —
Corn Products Sales Co. — —
Crane Co. — —
Crucible Steel Corp. of America — —

D

Deitz Machine Works — —
De Laval Steam Turbine Co. — —
Diamond Alkali Co. — —
Ditts Machine Works — 6
Dodge Manfg. Corp. — —
Dow Chemical Co. — 16
Downingtown Mfg. Co. — —
Draco Corp. — —
Draper Brothers Co. — —
du Pont, E. I., de Nemours & Co. Electrochemicals Dept. — —
du Pont, E. I., de Nemours & Co. Dyestuffs Dept. — —
du Pont, E. I., de Nemours & Co. Grasselli Chems. Dept. — —
du Pont, E. I., de Nemours & Co. Polychemicals Dept. — —
Duriron Co., The — —

E

Ebasco Services, Inc. — —
Egan, Frank, & Co. — —
Elixman Paper Core Co. — —
Elwell Parker Elec. Co. — —
English China Clays Sales Corp. — —

F

Fairbanks, Morse & Co. — —
Farrel-Birmingham Co., Inc. — —
Ferguson, The H. K., Co. — 42
Fitchburg Screen Plate Co. — —

G

Geigy Co. — —
General Dyestuff Corp. — 17
General Electric Co. — —
Gibbs-Brower Co. — —
Glidden Co. — —
Goodrich Co., B. F. — —
Goodrich Chemical Co. — —
Goodyear Tire & Rubber Co. — —
Goslin-Birmingham Mfg. Co. — 51
Gotham Ink & Color Co. — —
Gottesman & Co. — Front Cover
Graphic Arts Int. Corp. — —
Grinnell Co., Inc. — 31
Gulf Oil Corp. — 19
Gurley, W. & L. E. — —

H

Hagan Corp. (Calgon, Inc.) — —
Hall, Thomas W., Co. — 48
Hamblet Machine Co. — —
Harris-Seybold Co. — —
Heppenstall Co. — —
Hercules Powder Co. — 15
Heyden Chemical Co., Aktivin Div. — —
Hofft Co., Inc. — —
Holyoke Machine Co. — —
Hooker Electrochemical Co. — —
Huber, J. M., Corp. — —
Hubinger Co., The — 53
Hungerford & Terry, Inc. — 52
Huyck, F. C., & Sons — —

I

International Nickel Co. — —
International Wire Works — —

J

Jenkins, M. W., Sons, Inc. — —
Johnson Corp., The — —
Johnson, Alvin H. & Co. — —
Jones, E. D., & Sons Co. — 40

K

Kalamazoo Tank & Silo Co. — —
Kidder, Peabody & Co. — —
Kinsley Chemical Co. — 44
Knox Woolen Co. — 50
Koppers Co., Inc. — —

L

Langston, Samuel M., Co. — 29
Lindsay Wire Weaving Co. — 55
Lobdell-United Co. — 21
Lockport Felt Co. — —
Lodding Engineering Co. — 25
Lovejoy Flexible Coupling Co. — —
Lukens Steel Co. — 13
Lyddon Co. — —
Lynch Corp. — —

M

Magnus Metal Div., Nat. Lead Co. — —
Main, Charles T., Inc. — 42
Manchester Machine Co. — 2
Marietta Concrete Corp. — 55
McBride, Edward J., Company — —
Mead Sales Co., The — —
Meincke, A. M., & Son — —
Meisel Press Mfg. Co. — —
Merrick Scale Co. — 44
Michigan Steel Casting Co. — 42
Monsanto Chemical Co. — 10
Montague Machine Co. — —
Moore & Munger Co. — —
Moore & White Co. — —
Moorhead Electrical Machinery Co. — 48
Morden Machines Co. — —
Morey Paper Mill Supply Co. — —
Morningstar, Nicol, Inc. — —
Mount Hope Machinery Co. — —
Murray, D. J., Mfg. Co. — —

N

Nash Engineering Co. — 56
National Adhesives — 3
National Aniline Div., Allied Chem. & Dye Corp. — —
National Starch Products, Inc. — 3
National Tube Co. — —
Naugatuck Chem. Div., U. S. Rubber Co. — —
Niagara Alkali Co. — 33
Nichols Engrg. & Research Co. — —
Nopco Chemical Co. — 59
Northern Engraving & Mch. Co. — —
Norton Co. — —

P

Paper & Industrial Appliances — —
Parsons & Whittemore — —
Peabody Engrg. Co. — —
Perkins, B. F., & Son Co. — Back Cover
Perkins Goodwin Co. — —
Permutit Company, The — —
Photovolt Corp. — 56
Pittsburgh Plate Glass Co. — —
Plaskon Div., Libbey-Owens-Ford — —
Poirier Control Co. — —
Potdevin Machine Co. — —
Powell, William, Co. — 4
Price & Pierce, Ltd. — 54
Pulp & Paper Trading Co. — —
Pusey & Jones Corp., The — —

R

Railway Supply & Mfg. Co. — —
Raymond, Chas. P., Service, Inc. — 47
Record Fdy. & Machine Co. — —
Red Ray Manufacturing Co., Inc. — —
Reichhold Chemicals, Inc. — —
Reidel, Gus, & Son — —
Reliance Elec. & Engrg. Co. — —
Research Corporation — —
Restigouche Co., Ltd. — —
Rice Barton Research Corp. — —
Rogers, S. C., & Co. — —
Rohm & Haas Co. — 23
Roots-Connersville Blower Corp. — —
Ross, J. J., Co. — 48
Ross Paper Machinery Co. — —
Rust Engineering Co. — 42

S

Sandusky Fdy. & Mch. Co. — —
Sandy Hill Iron & Brass Works — —
Seaboard Air Line R.R. Co. — 35
Shartle Brothers Machine Co. — 6
Shuler & Bennighofen — —
Simonds Saw & Steel Co. — —
Sinclair Refining Co. — —
Sirrine, J. E., Co. — —
SKF Industries, Inc. — —
Smidth, F. L., & Co. — —
Smith & Winchester Mfg. Co. — —
Socony Vacuum Oil Co., Inc. — —
Sonneo Products Co. — —
Spray Engineering Co. — 46
Sprout Waldron & Co., Inc. — 43
Squier Corp., The — —
Stebbins Engrg. & Mfg. Co. — —
Stein, Hall & Co., Inc. — —
Stephens Adamson Mfg. Co. — —
Stickle Steam Specialties Co. — —
Stowe Woodward Inc. — —
Sun Oil Co. — —
Sutherland Refiner Corp. — —
Swenson Evaporator Co. — —

T

Taylor Instrument Co. — —
Taylor Stiles & Co. — —
Tennessee Coal, Iron & R. R. Co. — —
Testing Machines, Inc. — —
Texas Co., The — —
Texas Gulf Sulphur Co. — —
Thwing-Albert Instrument Co. — —
Tide Water Assoc. Oil Co. — —
Timken Roller Bearing Co. — —
Tissue Converting Corp. — 42
Titanium Pigment Corp. — 27
Towmotor Corp. — 45

U

United Carbon Co., Inc. — —
U. S. Rubber Co. — —
U. S. Steel Corp. — —
United States Steel Export Co. — —
United States Steel Supply Co. — —

V

Valley Iron Works Co. — —
Vanderbilt, R. T., Co. — —
Vaughan, Frank C. — —
Virginia Smelting Co. — —

W

Waldron, John, Corporation — —
Walworth Co. — 37
Waterbury Felt Co. — —
Waterbury, H., & Sons Co., Inc. — 50
Weber, H. G., & Co., Inc. — —
Wellman Engineering Co. — 54
Western Gear Works — —
Western Precipitation Corp. — —
West Virginia Pulp & Paper Co. — 50
Weyerhaeuser Timber Co. — —
Whiting Corp. — —
Williams Apparatus Co. — —
Williams Gray Company — —
Worthington Pump & Machy. Corp. — —
Wyandotte Chemicals Corp. — —

BUSINESS STAFF

Arthur E. Gordon, Business Mgr. — **Frederick B. Grosse, Production Mgr.**

Bruce E. Brown, 15 West 47th Street, New York, 19, N. Y. PLaza 7-2370 — George Heitzeberg — H. K. Vinton, Room 1030, 79 West Monroe St., Chicago, 3, Ill. CEntral 6-3784 — Franklyn H. Olsen

McDonald-Thompson Company

LOS ANGELES, 5, CAL.: 3727 West Sixth Street, DUnkirk 7-5391 — SAN FRANCISCO, CAL.: 625 Market St. YUkon 6-0647
SEATTLE, 1, WASH.: Terminal Sales Bldg. Main 3860 — PORTLAND, 4, ORE.: 115 SW Fourth Ave. ATwater 7401
DENVER, 2, COLO.: 317 Railway Exchange Bldg. MA 2733
EDWARD M. BUCK, 4552 Rheims Place, DALLAS, 5, TEXAS. Justin 8-8378

"Whether there be Prophecies, They Shall Fail"

. . . those words, spoken by a redoubtable seer nearly 2000 years ago, have probably never been so pertinent as they are today. For today's most carefully computed prediction is liable to prove completely false tomorrow. *We* certainly are not attempting to prophesy anything, but are simply keeping "our noses to the grindstone," to provide the paper industry with quality chemicals . . . as we have done for years.

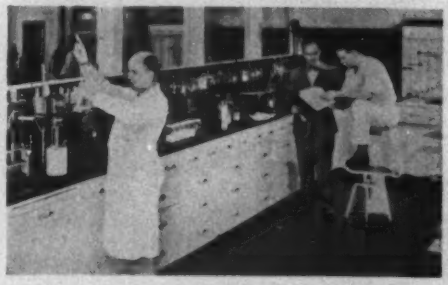
The pictures shown here join with our headline to emphasize this message we would leave with you: *Whatever the uncertainties ahead, you can do no better than call upon the experience, skills and facilities accumulated by Nopco*.*

One of the oldest and most reputable suppliers of paper processing materials, we are confident we can afford outstanding assistance to the pulp and paper industry as it goes to work today in the interests of national defense.

In the manufacture of paper board particularly—destined to play a major role in meeting the packaging needs of America's all-out defense effort—we believe we can be of special help. But whatever your product—paper, paper board, or insulating board—we are ready to make recommendations and supplement laboratory data with technical aid right in your mill.

Send us your specifications now. At the moment, we are prepared to supply you with defoamers, sizes, and all the other chemicals for which we are famous. It will remain our fixed policy to serve you to the best of our ability, *come what may.*

Nopco headquarters — Harrison, N. J.



A section of Nopco's paper laboratories

Applying paper coating mixture to hand sheet.

Testing to determine effectiveness of sizes.

NOPCO
EVOLVED FROM RESEARCH

NOPCO CHEMICAL COMPANY
HARRISON, NEW JERSEY
Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.

*REG. U. S. PAT. OFF.

PERKINS
Perkins Calender Rolls—the natural result of the longest and broadest experience in the industry—give quality that is definitely reflected in your product. Perkins service includes refills of any make of calender rolls.
B. F. PERKINS & SON, Inc.
HOLYOKE, MASS., U.S.A.
LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD